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A Review of Development Plans in the Southern Province—1953

MTWARA PORT FROM THE AIR

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A REVIEW
OF
DEVELOPMENT PLANS
IN THE
SOUTHERN PROVINCE
1953

FOREWORD

I have been asked to write a Foreword to this Report on the Development Plans for the Southern Province of Tanganyika. The purpose of this Report is to explain the projects which the Government has in mind for the further development of that most important area of the Territory, and to state the targets of production which it is hoped will be achieved within the next few years. It will be seen from the Report that there is not likely to be any spectacular or sudden progress, but rather the steady building up of a sound economy based primarily on agricultural production. The Southern Province is well populated, has a steadier rainfall than many other parts of the Territory and, by and large, better soils. The African population is comparatively well educated and so becoming far more progressive and energetic than in former days. Communications, although still deficient in parts, have vastly improved and with the new port and railway there will be up-to-date methods of communication over a large section of the Province.

When I first arrived in Tanganyika in 1928, I was posted to Lindi, the then headquarters of the Southern Province, a quiet, unobtrusive and somnolent town. The people were lethargic and there was little production of value except for some sisal and a little grain. Staff, both administrative and technical, were so thin on the ground as to make any development a very slow affair. Communications were virtually non-existent. Meagre funds were available for the economic progress of the area, which was justly dubbed the "Cinderella" Province. This state of affairs did not noticeably improve for many years, particularly as the economic depression of the 1930's hit the country hard and recovery was only becoming apparent when the Second World War broke out. It was during the years immediately after the war that the whole tempo of development in Tanganyika increased. In the Southern Province this was marked by the advent of the Groundnut Scheme which, although a failure in its original concept, nevertheless provided unprecedented stimuli to the area and will, if the new policy proves successful, form a most important part of the development plan. Government too has recently provided funds for special development including monies for better roads, the increase of agricultural staff and the building of the new town of Mtwara. I, myself, have every faith that the developments envisaged in it are realistic and attainable.

The Report has been almost entirely compiled by Mr. G. W. Baker, District Officer, whose facile pen and admirable photographs have resulted, I think, in not only a most readable and attractive pamphlet, but one which contains a great deal of valuable information and statistics. Many others interested in the development of the Southern Province have assisted in the compilation including Mr. A. H. Pike, lately Provincial Commissioner of that Province. I feel sure that all who have immediate or projected interests in the Southern Province will find this Report most valuable and that interest in that part of the Territory will be greatly stimulated.

J. F. R. HILL,
Member for Communications, Works and Development Planning

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INTRODUCTION

This review of development in the Southern Province of Tanganyika has been written after reference to local opinion with the aim of examining present progress and indicating Government's views on the future lines of advance for the whole Province in a territorial context. The intention is to provide a broad outline of policy within which development plans in the eight Districts may have continuity of purpose but also enough flexibility for details to be shaped locally by the course of events.

The object of development is regarded as the raising of standards of life by the creation of wealth and this review therefore places economic progress before plans for social or constitutional advance. Government's function is considered to be the stimulation of development initially and thereafter the provision of public services necessary to its continuance and growth.

The review arose from the need for revision of a brief report on development prospects written in 1950 at a time when disillusion over the Overseas Food Corporation threatened the Province with abandonment of some of the major capital works included in the Groundnuts Scheme, notably the port under construction at Mtwara and the railway from it to the groundnut area at Nachingwea.

It was believed that in time the port and railway would bring development with them but meanwhile a firm prospect of 150,000 tons of exports a year by 1960 was required before work on their construction could be allowed to go on. By 1950 however it was already clear that the O.F.C. would fail in its original hope of producing that figure from the Nachingwea farms and the estimate for 1960 had to be reduced to 42,000 tons a year. A stock-taking had to be made after that drastic reduction and the 1950 report forecast that the overhaul total would still be achieved by the export of 108,000 tons from other sources, principally African production in the Province. That was two and a half times the average annual export at the time but the bold estimate was accepted and on the strength of it the railway and port went on.

As a result of further reductions in staff and funds the O.F.C.'s estimate of its production by 1960 has now dwindled to 6,000 tons a year. The results now being achieved by the reorganized Nachingwea Unit however suggest that this rather cautious estimate may be substantially exceeded. In spite of poor rains and a much reduced scale of activity the Unit produced some 4,000 tons in the 1953 season. On the other hand the shift of emphasis away from the Groundnuts Scheme has stimulated interest in the other potentialities of the Province and total export production from agricultural and other sources is now rising steadily. The volume of exports in 1952 was two and a half times the 1939 figure. The speed of advance has thus already exceeded the expectations of the 1950 report.

It is realized that the prospects of that pace being maintained will depend upon the state of world markets, the funds available for development, and a variety of other factors which are difficult to forecast but these are not considered to be any justification for scepticism. Similarly it is believed that the

estimates of future production quoted in this report will be capable of fulfilment provided that the economic development of the Province goes ahead. The view that all of these increased production figures can be reached simultaneously may be challenged as over-sanguine in the territorial context but it should be borne in mind that conditions in the Southern Province are different from some of the more highly developed Provinces where scope for pioneer development is less. The Southern Province is only at the beginning of its opening up, under the stimulus of capital investment in the last five years, and the rise in production may therefore be correspondingly steeper for the next few years with a gradual change to a normal rate of progress later.

This review is designed to present as much as possible of the evidence supporting that view. After Chapter I, which describes the Southern Province and considers certain aspects of development policy, the report contains three main divisions; Chapter II dealing with the productive output of the individual African, Chapter III dealing with developments likely to attract new capital and Chapter IV which discusses pioneer enterprise likely to be beyond the capacity of private capital. These are followed by chapters on labour supply, communications, and other matters of general concern in the review, with Appendices of statistical information relevant to the rest of the report.

DISTRICT SUMMARIES

Kilwa District

Area: 6,313 square miles.
Population: European 23, Asian 340, African 93,084.

General Features.

The District is the most backward in the Province although potentially as productive as its neighbour coastal District, Lindi. It is dependent, apart from coastal shipping, on the main Lindi-Dar es Salaam road which is closed every year throughout the rains. A more than average streak of typical coastal indolence seems to have encouraged the population to take advantage of this isolation. The literacy rate is estimated at five per cent.

Special Features.

Kilwa Masoko, the new District Headquarters, has a fine natural harbour with water deep enough for large ships. Exports through the port are increasing and much of the 1960 target of 15,500 tons of surplus produce could be handled through the port if improved port facilities were provided, particularly a better jetty for loading lighters.

Main Lines of Development.

The first need is for better communications to integrate the District with the rest of the Province and for mass literacy campaigns to liven up the people. There is no shortage of land and African production can be greatly increased. There is land suitable for alienation, e.g. for sisal, cashew, timber, etc., in most of a thirty-mile wide coastal belt. Two sisal estates and two timber concessions are already working.

The programme includes:—

(a) *African Production:*

(i) more planting of cassava as a reserve against food shortage.

(ii) mechanical cultivation schemes in the valleys.

(iii) steady increase in cashew nut production.

(iv) improvement of the fishing industry, e.g. to provide dried fish for labour on new estates.

(v) steady increase in livestock.

(vi) reduction of the heavy loss of crops by vermin.

(vii) increasing employment in non-native enterprise.

(b) *Non-Native Development:*

(i) sisal and cashew estates in the coastal belt.

(ii) steady increase in livestock on the above.

(iii) timber concessions.

(c) *Development Works:*

(i) development of the new Kilwa Masoko township by piping water from Mpara Hill, new port works, proper housing of the District Native Authority headquarters at Masoko and building of an African urban housing estate.

(ii) provision of coastal shipping jetties at Samanga, Kilwa Kivinje, Mtanga and Pande, and enlargement of Rushungi jetty to take vessels larger than lighters.

(iii) improvement of communications, particularly the raising of Lindi-Dar es Salaam road to all-weather conditions.

(iv) medical services, the worst in the Province, to be improved.

1960 Export forecast—15,500 tons.

PRINCIPAL CROP TARGETS.

	Tons		Tons
Cashew	2,000	Timber	1,800
Simsim	2,000	Sisal	1,000
Copra	2,000	Paddy	1,500
Maize	1,500	Cassava	1,000
Mtama	1,000	Mangrove bark	500

DISTRICT SUMMARIES

Lindi District

Area: 4,144 square miles.

Population: European 472, Asian 3,694, African 227,376.

GENERAL FEATURES.

Lindi District has had the advantage of handling the entrepot trade of the Province and also has a high agricultural output. It contains the bulk of the sisal estates in the Province and has a higher proportion of non-native enterprise than its neighbour coastal Districts. Apart from its commercial pros-

perity and the amount of paid employment in industry the District can do well in African production also. It contains a quarter of the Province's population, the largest District total by a margin of 74,000.

Special Features.

Lindi is the natural gateway to the Province. Its estimate of export production in 1960 is the highest of all the Districts and in the ordinary course its leading economic position would be assured. The development of Mtwara port as the terminus of the Southern Railway however has raised doubts about its future. In theory it should suffer a decline with the shift of the business centre to Mtwara but in practice it may prove easier to create the new port than to kill the old. The outlets for export production, particularly from estates on each side of Lindi creek, are well-tried and economical. For northbound cargo there would be no advantage in first going south to Mtwara for loading into ocean shipping when coastal vessels can take it north to Dar es Salaam for the same purpose. For southbound cargo coastal shipping may still be a cheaper route to Mtwara than the railway.

Lindi's access to the railway is by road or lighter to Mkwaya, at the head of the creek, where the Mkwara-Ruo branch line begins. The road is being rebuilt and will be ready in 1954. The routes which the District's imports and exports will take however are not yet clear as they will depend upon the railway tariff and shipping freight rates through Mtwara port. The Mkwaya-Ruo line moreover is only built to temporary construction standard and it is not yet known whether its conversion to a permanent line, which would cost some £200,000 can be undertaken. If the line remains open and Mtwara becomes a berth port (see Chapter VII) exports from Lindi District west of Mingoyo will probably go by rail to Mtwara. Those from east of Mingoyo will go out through Lindi by coastal shipping, or by ocean shipping if cargo is offering in large enough consignments, viz. in lifts of five hundred tons or more.

If Mtwara is not declared a berth port there may be a tendency for traffic even from west of Mingoyo to go out through Lindi. The distance by rail from Mtama to Mkwaya is only twenty-nine miles as compared with eighty-two to Mtwara and the charge at Mkwaya for handling and lighterage for transhipment at Lindi is only one shilling per ton.

If, however, the branch line from Mkwaya/Ruo is closed it seems probable that Lindi District's contribution to Mtwara traffic will be confined to timber from the Rondo and export production from the Mtama/Ruo area. On the 1960 estimates this would mean a loss to direct shipments through Mtwara of about 20,000 tons a year.

Over a third of the District's area is covered by the 1,500 square mile concession granted to Steel Bros. (Tanganyika Forests) Ltd., for the extraction of timber from the Rondo plateau. The present programme for extraction of the *mvule* and *mninga* stands is expected to last fifteen to twenty years and forms a valuable item in the economy of the District. The present output of the mill is 6,000 tons of sawn timber a year. It is moved by thirty-ton Scammell lorries down to Mtama to be railed to Mtwara for shipment.

Main Lines of Development.

Although it has not yet been closely surveyed the area between Ruo and Kilido appears to contain land suitable for alienation and there may be smaller areas in other parts of the District. In general, however, the District is thickly populated and the amount of land for estate cultivation is limited. The scope for non-native enterprise appears to be rather in commercial activity and in capitalized undertakings such as the Rondo mill, the cellulose factory at Lindi and the factories contemplated at Mtama for cashew processing and starch manufacture.

A steady rise in African production will continue to be an equally necessary form of development, stimulated by the railway and port and better roads. It is doubtful however whether the acreage under African cultivation can be much increased by hand methods and mechanical cultivation schemes are therefore being considered for rice and other crops in the Mbwemkuru and Lukuledi valleys. Native Treasury equipment and staff may be used as in other Districts or ploughing might be done on contract. The latter appears a useful outlet for non-native enterprise as part of a plan to harness non-native resources and ability in partnership with African production rather than in competition with it. European participation in the marketing and business management of African production from native land ploughed by contractors would bring greater acreages under cultivation than are possible by present methods.

The Mbwemkuru valley is more extensive than the Lukuledi and equally fertile, yet is sparsely populated and much less productive. This appears to be due to the lack of all-weather communications and long-term plans will have to provide for better roads to enable the valley to be more closely administered and more thickly settled in order to obtain the very large contribution it could make to the District's production. Similarly the people of Mnacho are good agriculturists whose production, particularly of vegetables, would be increased if there were more traffic on the Ruangwa-Mnacho-Nanganga road to take it out. A branch of the new Mtwara-Dar es Salaam road alignment, which is being tentatively considered to follow part of that road, would probably assist that object.

The District has mineral deposits requiring further exploration and development, particularly mica in a number of places and graphite, of which there are deposits near Ruangwa. Apart from the work already in hand on reconstruction of the Lindi-Mtama section of the Lindi-Songea road a preliminary survey is in progress of the new Dar es Salaam-Mtwara Road to pass through the District from north to south, probably crossing the Lindi-Songea road at Mingoyo. Apart from these new roads and the railway, steady improvement is planned in the feeder roads leading from them into the production areas to provide the better communications which will be essential to the accelerated development of this already flourishing District.

1960 Export forecast—48,500 tons.

Principal Crop Target.

	Tons		Tons
Cashew	6,000	Rice	4,000
Pulses	3,000	Simsim	2,500
Mtama	2,000	Cassava	2,000
Maize	1,000	Castor seed	1,000
Sisal	12,000	Timber	6,300

DISTRICT SUMMARIES

Masasi District

Area: 3,597 square miles.
Population: European 94, Asian 102, African 127,022.

GENERAL FEATURES.

Masasi is a rather featureless District lying between the fertile coastal belt on one side and the upland Inselberg country of Tunduru on the other. In African agricultural production it is overshadowed, as it is geographically, by the Newala District, and in non-native development by Nachingwea its neighbour on the other side. Parts of the District are under tsetse fly and the poor distribution of water supplies limits the areas available for expansion of agriculture.

SPECIAL FEATURES.

The literacy rate is about sixty-five per cent and, also like Songea, Masasi offers a reservoir of trainees for industry and commerce. The Missions, who lead educational thought in the District and from long standing have acquired much influence in its administration, are anxious to help with technical and commercial training. Ndanda Mission in particular is well equipped to provide an industrial school.

MAIN LINES OF DEVELOPMENT.

Improved agricultural methods, rather than greatly increased acreages, are likely to prove the best source of larger tonnages. A start has been made on water and tsetse surveys to plan the areas for development. If water is found and fly removed from it the flat triangle between Masasi, Lulindi and Chidya offers scope for livestock and mechanical cultivation and a recent survey estimates that it has a capacity for 25,000 head of cattle. Breeding stock are already being introduced into the District. Subject to finding of water, there is a 35,000 acre block of land at Nanyindwa ten miles north-west of Masasi which might be suitable for alienation and a number of five hundred-acre plots along the Tunduru road between Masasi and Maratani.

1960 Export forecast—13,800 tons.

PRINCIPAL CROP TARGETS.

	Tons		Tons
Cassava	5,000	Sesame	1,000
Cashew	3,000	Rice and Paddy	500
Groundnuts	1,750	Maize	500
Pulses	1,500	Mtama	500

DISTRICT SUMMARIES

Mikindani District

Area: 1,505 square miles.
Population: European 157, Asian 848, African 110,139.

GENERAL FEATURES.

Mikindani is a comparatively fertile, typically coastal, District lying between two river valleys, the Ruvuma in the south and the Mambi in the north. It has only modest prospects for non-native agriculture as most of the land which might be suitable for alienation will be needed for native development.

On the other hand it is capable of a high African output and the forecast of export production for 1960 would be equal to almost a ton of surplus produce a year per taxpayer. The development of the railway and port, and of secondary industries in the area of the latter, will create a steady increase in demand for labour which may continue to be met in part by immigration of Mawia from Portuguese East Africa, over the Ruvuma river twenty-three miles to the south.

Special Features.

Mtwara port is eight miles by road south of Mikindani and is now the headquarters of the Province and of the Mikindani District. The railway feeding it enters the District on its northern boundary at Lake Kitere and may be able to stimulate production in this fertile area. There is much speculation whether the railway and ocean port will give Mikindani District a commercial activity comparable with that of Lindi and if so whether it will be at the expense of the latter or not. The 8,000-acre sisal estate at Mikindani is believed to be the largest in Tanganyika, with an annual production of 3,500 tons and a labour force of 4,000.

Main Lines of Development.

In spite of the new capital works the principal development in the District must be a steady increase in African production, particularly of food crops. It has the capacity, all that is needed is the stimulus of closer administration in the field. Its average annual marketed production per taxpayer is the second highest in the Province. In spite of the need for meat the tsetse infestation is too widespread for much hope of livestock breeding until the spread of close settlement inland from the coast drives the fly back. With a shortage of suitable land for alienation the scope for non-native enterprise appears to lie in industrial activity adjacent to the port and in providing initiative and management in partnership with African production as recommended for Lindi District.

The increase in African production can best be obtained by the use of mechanical equipment. The rising labour needs of new industries will prevent much extension of cultivation by hand methods, and it is fortunate that there are fertile areas suitable for mechanical cultivation. The pilot scheme along the Ruvuma, similar to that at Chiumo in Newala District, is proving successful and will be extended. There is ample land for it right up the Ruvuma valley from the coast, through the Mahurunga-Mchenjele area, as far as the Newala border. Plans are also in hand for development of a similar scheme along the Mambi river valley in the north, from Ndumbwe westward to Lake Kitere.

A further outlet for African production, suitable for management by European private enterprise, is a market gardening scheme to supply the growing township of Mtwara with fruit, vegetables, chickens and eggs. Land is available in the foothills of the port's hinterland and there would be an assured market for the produce.

Chief items in the usual need for a general improvement in communications are an all-weather road from Ndumbwe to Lake Kitere to serve the Mambi valley, and an all-weather loop road from Mtwara up the Ruvuma valley to Mahurunga, Mchenjele and out to the Mikindani-Newala road at Nanyamba. These are essential for increased food production.

1960 Export forecast—20,530 tons.

PRINCIPAL CROP TARGETS.

	Tons		Tons
Cassava	3,000	Cashew	6,000
Mtama	3,000	Pulses	1,000
Maize	2,000	Sisal	3,500
Rice and Paddy	1,500		

DISTRICT SUMMARIES

Nachingwea District
(formerly known as Ruponda)

Area: 14,400 square miles.

Population: European 350, Asian 190, African 45,000.

GENERAL FEATURES.

Nachingwea is a large, mainly flat and featureless District. Its population density is the lowest, and its production per head nearly the lowest, in the Province. Over a third of its area (5,700 square miles) is covered by the Selous Game Sanctuary. There is an abundance of unused land but it is mostly of the type needing heavy capital outlay in clearance of the thick bush cover and provision of water and communications. The District is therefore particularly suited to assisted development by specialized techniques as discussed in Chapter IV.

SPECIAL FEATURES.

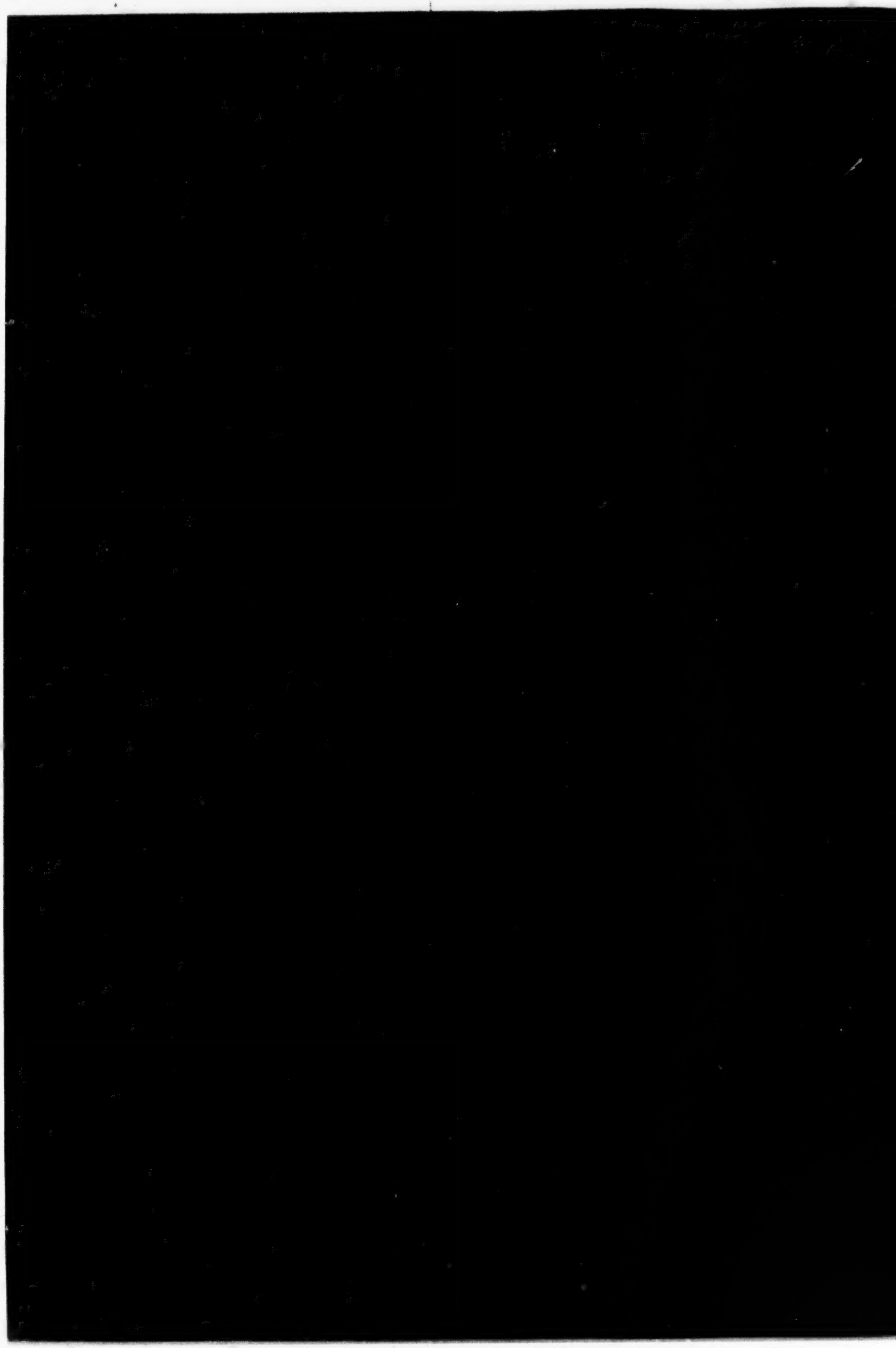
The Overseas Food Corporation has first call on 150,000 acres of land in the Nachingwea area under its Master Agreement with Government, although its programme until 1957 now envisages only 20,000 acres being utilized. The Groundnuts Scheme was the origin of the railway which will shortly pass right through the District on its way to Lumesule, and Nachingwea still remains the first large development area reached by the railway after it passes through the more densely populated coastal belt.

MAIN LINES OF DEVELOPMENT.

Alienation of land to non-natives is likely to be confined to areas cleared by the O.F.C. and will depend on how much the Corporation is willing to release. In addition to the O.F.C.'s Settlement Farm scheme the Matekwe area west of Nachingwea is suitable for this purpose. Other prospects for non-native enterprise are in the nickel deposits at Ntaka and the timber concession in the Namehe-Nangano area up the Ruponda-Liwale road.

A large increase in African agricultural production is the keynote of the District's development plan, aided by the handcarts and produce tracks mentioned in Chapter II, and stimulated by the O.F.C.'s seed and soil research and its partnership with African farmers in the Visiting Tenant scheme. There is undoubtedly a good future for livestock and in addition to herds on the O.F.C. farms a Veterinary Officer is now stationed in Nachingwea to encourage African ownership. The south and east of the District is believed to be fairly free of tsetse.

Newala District Office: The Ruvuma in the middle distance



1960 Export forecast—20,000 tons.

PRINCIPAL CROP TARGETS.

	Tons		Tons
Cassava	5,000	Maize	500
Cashew	6,000	Mtama	500
Sisal	3,500	Simsim	400
Rice	400	Timber	900

DISTRICT SUMMARIES

Newala District

Area: 1,763 square miles.

Population: European 36, Asian 300, African 154,710.

GENERAL FEATURES.

Newala is a compact District whose principal feature is the Makonde Plateau. Its population density and production per head are the highest in the Province, in spite of the plateau being almost waterless and crops having to depend on rain as it falls. Its communications are comparatively good and it has access to the railway through Mkwiti to Mtama, or direct to Mtwara by road.

SPECIAL FEATURES.

The plateau is of permeous sandstone which yields very little standing water. The biggest problem in the District is getting water to the top for domestic use during the dry season. The Major Makonde Water Scheme for this purpose is described in Chapter VI.

MAIN LINES OF DEVELOPMENT.

If the water scheme goes through some dispersion of population into the northern end of the plateau will be possible and much new land brought under cultivation. There is not enough land for much alienation but non-native enterprise may be needed for management of future mechanical cultivation schemes if success with the Chiumo pilot scheme warrants them. Handcarts, if they prove popular, may also add to these measures for increasing production but graded produce of higher quality will be the aim for the next few years rather than any large increase in tonnages for export.

1960 Export forecast—37,360 tons.

PRINCIPAL CROP TARGETS.

	Tons		Tons
Cassava	20,000	Mtama	2,500
Rice and Paddy	5,000	Millet	4,000
Cashew	5,000	Pulses	600
Maize	2,500	Sesame	300

DISTRICT SUMMARIES

Songea District

Area: 16,049 square miles.
Population: European 285, Asian 210, African 156,500.

General Features.

Songea is the largest District in the Province and yet has the lowest agricultural production per head, in spite of abundant water supplies. Most of it is hilly and, apart from the Matengo highlands, is not particularly fertile. Much of it is suitable for livestock but in the late thirties and early forties the spread of tsetse fly caused a decline in the formerly substantial numbers of stock which has only recently been checked. Paradoxically, with such a large area, the wealth of the District lies not in bulk production but in high-value crops such as tobacco, coffee, wheat, etc., and the estimate of export production by 1960 is the lowest in the Province in volume, although not in value.

There are four main areas: (a) Unyanja between the Matengos and the Lake Nyasa shore: (b) the Matengo highlands; (c) Ubena in the north towards the Njombe border and (d) Angoni covering the eastern half of the District. The Matengos are already intensively cultivated by the special "ngoro" system and are unlikely to achieve any substantial increase in production.

Special Features.

The coal deposits mentioned more fully in Chapter III are situated in Angani at Ngaka and also at Kitiwaka over the border in Njombe District. If they are opened up, and particularly if the iron ore at Liganga (also in Njombe) proves satisfactory the whole economy of the Province would be changed and it seems likely that either Njombe would have to be taken into the Southern Province or Songea into the Southern Highlands. The future of the railway beyond Lumesule depends upon whether the coal is worked or not.

The five to six thousand workers away from the District annually would be needed on the railway and the mines and the sixty-five per cent literacy rate, if fully utilized by technical and commercial training, might make Songea, like Masasi, a useful reservoir of the skilled and semi-skilled labour needed for these developments.

Main Lines of Development.

Constant pressure will be exerted to improve the quantity and quality of the tobacco and coffee as they are the largest sources of wealth. Plans for reclamation of land from tsetse are already in hand and veterinary surveys will be made to encourage restoration of the livestock industry, particularly in the Ruhuhu and Rutikira valleys where there is scope for African ownership in addition to non-native ranching. Angoni is peopled by a tribe not much given to agriculture for whom a steady increase in livestock raising seems to be the best prospect as tsetse is brought under control.

The Agricultural Department's demonstration farm at Mgwina has produced average yields of good quality flue-cured tobacco and 20,000 acres of adjacent land have been demarcated for offer as further farms. On the short experience of the crop to date there appear to be prospects for a tobacco industry, perhaps coupled with the estates in the Tunduru District.

A contribution to the increase in African production could be made by the fertile valleys in Ubena and Angoni with mechanical cultivation of rice and other crops on the pattern of other Districts. Rice might provide the bulk crop which the District needs but it is believed that haricot beans might also be worth experiment.

1960 Export forecast—3,750 tons.

Principal Crop Targets.

	Tons		Tons
Tobacco—fire-cured processed	1,500	Paddy	500
Tobacco—flue-cured processed	200	Wheat	300
Coffee	750	Sunflower	200

DISTRICT SUMMARIES

Tunduru District

Area: 7,452 square miles.
Population: European 34, Asian 85, African 66,408.

General Features.

Tunduru comprises lightly populated Inselberg miombo country with adequate rainfall and good distribution of rivers and streams. African agricultural output is only fair but is beginning to improve. There are large undeveloped areas suitable for alienation to non-native enterprise.

Special Features.

The extension of the railway beyond Nachingwea will bring the line into Tunduru District as far as Lumesule or possibly further. It will run to the north of the Lindi-Songea road and may assist development of that thinly-inhabited area by drawing population from south of the road where the majority of them live now. It may also help to retain some of the five to six thousand workers leaving the District annually for work on sisal estates.

The railway will serve the large block of land between the Muhuwesi and Mtetesi rivers surveyed for alienation in farming units of approximately 1,200 acres. Six of these are already in occupation for cultivation of flue-cured tobacco, which is expected to do well throughout this area, and more are in course of alienation.

Main Lines of Development.

The first priority is to increase African production. The land is available and a substantial rise in tonnage is possible. A number of new markets are to be built to facilitate disposal of produce and an effort will be made to improve conditions of living in the District by offering employment locally and by encouraging the planting of kapok and cashew trees, which tend to stabilize the population. Special attention will be given to the larger valleys, notably the Lukumbule where there are at least 10,000 acres of good flat riverine land, with a road running through it, suitable for mechanical cultivation of rice

and perhaps sugar. The establishment of more non-native estates will be encouraged as an asset to the District's economy. Secondary roads need improvement all-round and the new road connecting the Lindi-Songea road to railhead at Lumesule via Mindu is already under construction.

1960 Export forecast—12,170 tons.

Principal Crop Targets.

	Tons		Tons
Rice	2,500	Cassava	2,000
Cashew	1,500	Groundnuts	1,500
Maize	1,000	Pulses	1,000
Flue-cured tobacco	500		

CHAPTER I

The Background to Development

Physical Description.

1. The Southern Province is the second largest Province in Tanganyika and contains twelve per cent of the Territory's population in sixteen per cent of its land area. Its area of 55,223 square miles is larger than the whole of England or twice the size of Ceylon. Its average population density of eighteen per square mile compares with approximately seven hundred and fifty in England, 1,000 amongst the Wachagga around Kilimanjaro but only two and a half in Australia. It is bounded on three sides by water, the Indian Ocean in the east, the Ruvuma river in the south and Lake Nyasa in the west. The Ruvuma is the border with Portuguese East Africa but it is a loosely-controlled frontier and along the six hundred miles of its length (only four hundred and twenty are the frontier) movement over it in either direction by human, animal or pest is hindered by little more than crocodiles.

2. The rainfall, spread over a rainy season from December to April, is fairly evenly distributed over the Province, being heavier as the ground rises from sea level to some 4,000 feet in Songea District (coastal average thirty-five inches, hinterland thirty-three inches, plateau thirty-seven inches, Tunduru forty inches, and Songea forty-four inches). Its varied terrain includes among the eight Districts the humid, comparatively flat, coastal Kilwa, Lindi and Mikindani, the compact plateau-top Newala, the central, drier and mostly flat Masasi and Ruponda, the cooler miombo country of Tunduru, half way between plain and hills, and the large hilly District of Songea.

Economic Potential.

3. In addition to a surplus of land and no real shortage of water the Province has the advantage of a well-varied economy. Cash crops of high value such as coffee, tobacco, sisal and cashew are already grown in increasing quantities and substantial surpluses of staple foodstuffs are exported (Newala District alone produces more cassava for export than the rest of the Territory put together). There are also mineral prospects awaiting further exploration and development. Owing to the prevalence of tsetse fly and disease the livestock population is not large (under 25,000 head of cattle) but the provision of beasts for protein diet has a high priority in development plans and numbers are being increased rapidly.

4. Communications need improvement all round and are discussed in Chapter VII. The roads have not kept pace with economic development and even now the Lindi-Dar es Salaam road is closed annually during the rains. Nevertheless, despite poor communications, progress since the war has been rapid, and production figures are rising steeply.

Imports and Exports.

5. The estimates of surplus production in the Province by 1960 which were compiled for the 1950 development plan have been revised in the light of actual production since then and, excluding O.F.C., have risen from 108,500 tons to 161,000 tons. Comparative figures of imports and exports, and the revised 1960 forecasts, are given in the following tables*. The revised estimates represent the increases likely to accrue from developments in immediate prospect and do not take account of certain factors, not yet operative, which might raise the figures still higher, particularly the westward extension of the railway beyond Nachingwea.

It is realized that the all-round increase in production which they forecast may appear optimistic and may take longer to achieve if markets should fall off. Nevertheless the estimates have been carefully prepared by District teams and are believed to represent what could be achieved by 1960 in favourable conditions, taking into account such factors as the present annual rise in production, population increase, improved methods of agriculture, mechanization, better seed strains, development of permanent crops, and improved communications.

*See below and pages 15 and 16.

TABLE A: PAST EXPORTS AND REVISED ESTIMATES FOR 1960. ALL FIGURES ARE IN DEADWEIGHT TONS

Product	Tonnages Exported		Estimated Export Tonnages for 1960	
	1947	1952	Original (1950) Estimates	Revised Estimates
Beeswax	52	101	300	220
Cashew nuts	1,313	9,740	10,000	29,500
Cassava	2,244	16,927	20,000	38,000
Castor seed	—	609	—	1,850
Coffee	—	196	—	750
Colombo root	97	12	300	220
Copra	626	1,070	3,000	2,650
Cotton	31	25	300	555
Groundnuts	991	738	4,000	4,000
Gum Arabic	62	4	200	—
Kapok	—	—	—	90
Maize	1,932	10	2,000	9,150
Mangrove bark	3,548	429	1,000	500
Millet and other grains	783	337	1,000	1,300
Mtama	4,254	15	2,000	9,500
Native starch	13	—	200	—
Paddy or rice	537	138	3,000	15,900
Pulses	4,976	1,543	6,700	7,450
Sesame	3,344	1,921	6,000	6,950
Sisal	9,074	11,159	25,000	20,000
Sunflower	—	1,954	3,000	820
Timber	—	4,540	15,000	9,000
Tobacco:				
(a) fire-cured	126	398	2,000	1,500
(b) flue-cured	—	—	3,500	700
Wheat	—	—	—	300
Total	34,003	51,866	108,500	160,905
Add estimated O.F.C. production	...	...	41,500	6,000
Total			150,000	166,905

TABLE B: EXPORT PRODUCTION: ANALYSIS BY DISTRICTS OF ESTIMATES FOR 1960

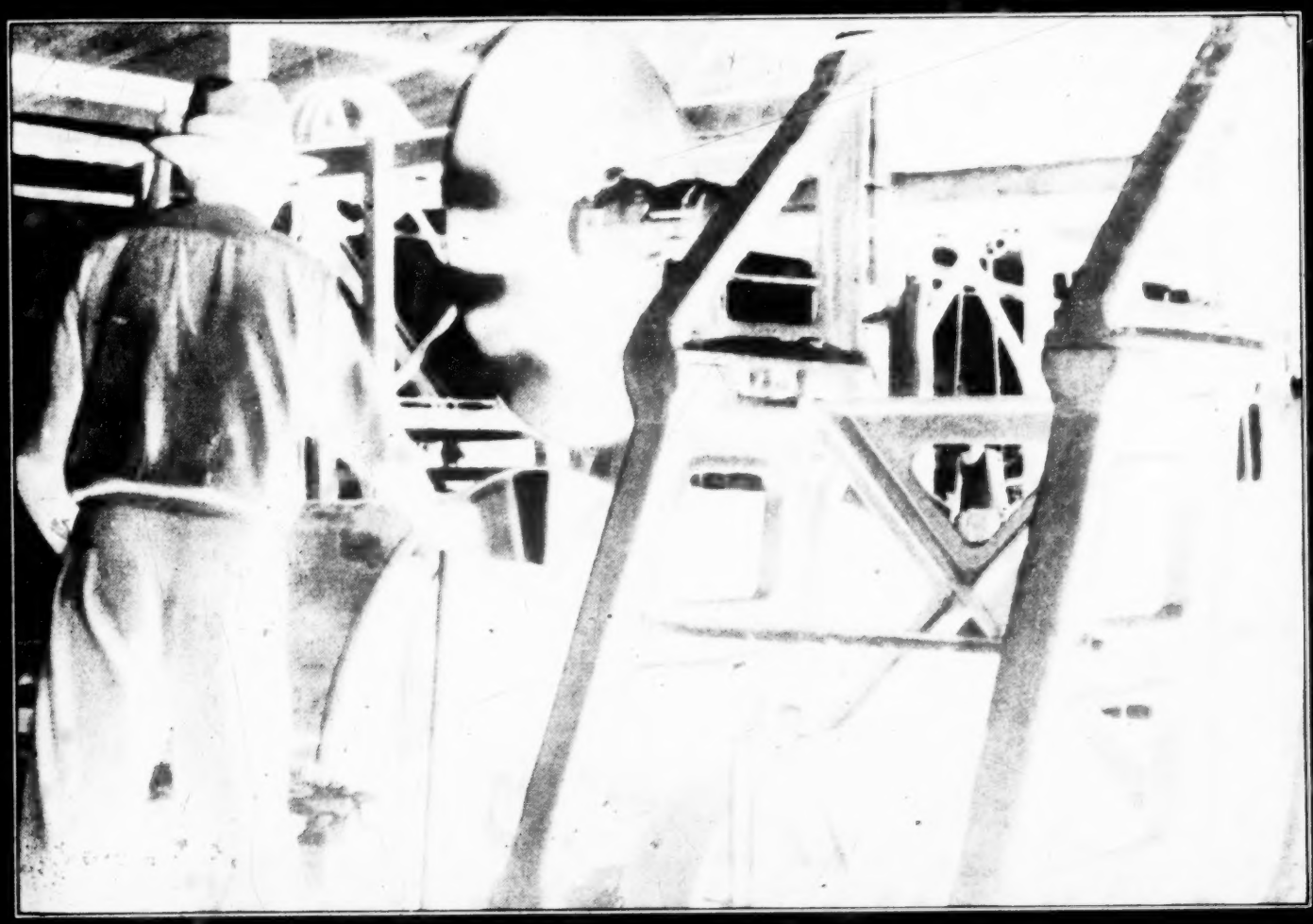
Product	Kilwa	Lindi	Masasi	Mikindani	Nachingwea	Newala	Songea	Tunduru	Total in Tons
Beeswax	—	30	—	—	30	10	100	50	220
Cashew nuts	2,000	6,000	3,000	6,000	6,000	5,000	—	1,500	29,500
Cassava	1,000	2,000	5,000	3,000	5,000	20,000	—	2,000	38,000
Castor seed	—	1,000	—	—	200	150	—	500	1,850
Coffee	—	—	—	—	—	—	750	—	750
Colombo root	—	150	—	—	70	—	—	—	220
Copra	2,000	500	—	150	—	—	—	—	2,650
Cotton	—	50	—	5	—	—	—	500	555
Groundnuts	—	200	1,750	100	200	250	—	1,500	4,000
Kapok	10	30	15	15	—	—	—	20	90
Maize	1,500	1,000	500	2,000	500	2,500	100	1,050	9,150
Mangrove bark	500	—	—	—	—	—	—	—	500
Millet and other grains	—	40	50	10	100	1,000	50	50	1,300
Mtama	1,000	2,000	500	3.000	500	2,500	—	—	9,500
Paddy or rice	1,500	4,000	500	1,500	400	5,000	500	2,500	15,900
Pulses	—	3,000	1,500	1,000	300	600	50	1,000	7,450
Sesame	2,000	2,500	1,000	250	400	300	—	500	6,950
Sisal	1,000	12,000	—	3,500	3,500	—	—	—	20,000
Sunflower	—	20	—	—	50	50	200	500	820
Timber	1,800	6,300	—	—	900	—	—	—	9,000
Tobacco:									
(a) Fire-cured	—	—	—	—	—	—	1,500	—	1,500
(b) Flue-cured	—	—	—	—	—	—	200	500	700
Wheat	—	—	—	—	—	—	300	—	300

TABLE C: IMPORTS INTO THE SOUTHERN PROVINCE

(Gross Figures in Tons)

Year	General Cargo		Bulk Coal		Bulk Oil		Total
	Lindi-Mkwaya	Mikindani-Mtwara	Lindi-Mkwaya	Mikindani-Mtwara	Lindi-Mkwaya	Mikindani-Mtwara	
1947	11,516	2,545	—	—	—	—	14,061
1948	75,952	13,100	—	—	—	—	89,052
1949	83,648	17,715	6,032	8,500	300	—	116,195
1950	58,261	14,238	2,000	226	439	12,728	87,892
1951	37,004	16,546	952	403	461	1,328	56,694
1952	31,903	10,884	4,383	—	—	5,094	52,264

Notes: (i) Figures for Kilwa are not available but are not significant.
(ii) These figures include imports on O.F.C. account which are now falling, but statistics to separate them from general imports are not available.
(iii) Statistics are not available to break down the totals of general cargo into principal types of imports.



Training of Africans: Circular Saws in the Rondo Saw Mill

Training of Africans: Tractor ploughing at Nachingwea

Development Enterprise.

6. Africans outnumber other races in the Southern Province by one hundred and thirty-two to one and therefore the part they have to play in development is most important. Their first task is to produce enough food for their growing numbers but there will be scope for them to take a progressively larger part in other forms of development. Initially, however, many of the large scale undertakings will have to rely upon non-native capital because much of the primary development is beyond the capacity of the African either in financial resources or knowledge of the techniques involved. This does not imply any privileged position for the non-native.

Training of Africans.

7. An influx of non-native enterprise need not be detrimental to African interests. On the contrary it may do a service by demonstrating techniques and training Africans for higher responsibilities. All the development plans in the Province which call for non-native initiative are intended to provide that training and indeed will be dependent for success on large numbers of Africans as skilled workers.

Local Government.

8. It is considered that more means should be found of giving Africans, through their Native Authorities or by membership of councils, a more active interest in development. As local government bodies grow in stature under the provisions recently made for them it is hoped that the Native Authorities who sit on them will become more closely concerned with the planning and execution of development and thereby acquire a more informed interest in the co-ordinated development of natural resources in their Districts from a non-racial standpoint.

CHAPTER II

African Production

9. African agricultural production is likely to remain one of the most important items in the economy of the Province for some years. There is not much prospect however of raising output by calling for larger acreages under cultivation by present methods, which are already believed to stretch the peasant farmer to near the limit of his individual capacity. Other means of increasing production have therefore to be found in the use of fertilizers and irrigation, the adoption of better agricultural practices and special seed strains to give higher yields, and the introduction of mechanical farming.

10. Africans are becoming more money-conscious and as a result more progressive in their farming outlook. Not only are they alive to the better prices offering on the markets but they now also have the desire to make more money by growing more for sale. The rise in native tax collected in the Province from £62,046 in 1947 to £182,142 in 1952 and in Native Treasury revenue from market dues from £2,472 to £33,877 in the same period is significant. That increase in cash wealth may prove the incentive to the peasant farmer to grow more of his own free will and has certainly brought about the steady rise in the volume of produce passing through the markets since post-war development plans were launched. To quote one example, Newala District, sold over 23,000 tons of cassava on its markets in 1952, which was twice the highest figure ever recorded previously.

11. Efforts will be made to work out systems of partnership between African production and non-native capital and initiative. These may take the form of non-native business management in the marketing of co-operative African produce or of African farming assisted by non-native capitalized services as in the O.F.C. African Visiting Tenant Farm Scheme. The bulk however of the African contribution to productivity will continue to come from the individual cultivator on his shamba and it is the task of Government and private development enterprise to devise means of helping him to increase it. Plans in the Province are therefore required to embrace the following points:—

(i) experiments with seed and soils;
(ii) better agricultural methods to preserve and improve the quality of the soil;
(iii) planting of crops to stabilize the population;
(iv) mechanical cultivation schemes;
(v) access to markets and the efficiency of the marketing system;
(vi) higher prices for higher quality: grading and produce inspection.

Mechanical Cultivation; Nachingwea

Matengo Highlands: Njoro cultivation

A. Crop Production

Experimentation.

12. It is well proven that scientific teaching based on practical experiment can produce better results from the land than the hereditary farm craft of the African peasant, and much of the increase in African production planned for the next few years will be made possible by the work of the Agricultural Department's experimental station at Mahiwa in Lindi District and the O.F.C.'s experimental farm at Nachingwea.

13. Apart from scientific experiment much remains to be done to safeguard and improve seed supplies which the improvident Africans frequently disregard until it is too late. Some of the superior crop varieties for which the Southern Province once had a reputation have now been lost because steps were not taken to preserve their integrity. Each District is responsible for the adequacy of its own seed supplies, operating through the Native Authorities and District teams, and the Provincial team where necessary. Cotton in Tunduru is an example. It was a popular and profitable crop in previous years and yet in 1952 the District found itself very short of seed. Late planting may have been partly the cause of poor yields but it was thought that a change of seed might be beneficial and experiments are therefore being made with other varieties, U.K. 48 and U.K. 51, which show promise of a better crop.

Methods of Cultivation.

14. Better methods of planting and tending crops can do much to improve the yield of traditional African agriculture which grew up in conditions of an abundance of land that no longer exist in many parts. Constant effort is made to find the methods most suitable for each locality and crop but cultivators are conservative and it does not always follow that successful methods spread from one area to others as fast as they might. The "ngoro" system of cultivation practised in the Matengo highlands of Songea is recognized as perhaps the finest form of hillside cultivation in Tanganyika and yet is not found elsewhere in the Province. Within the Songea District an attempt is being made to secure its adoption in the Ubena hills, except for the recently introduced coffee crop to which it is unsuited and for which terracing and a heavy top mulch are being used as an alternative. In order to ensure that experience gained in one place is not lost in another, encouragement will be given to exchanges of visits between the more progressive Native Authorities to compare conditions in each other's Districts.

Improvement of the Soil.

15. Plans for the development of agricultural production entail large increases in the amount taken out of the land and it is therefore essential that everything possible should be done to preserve and improve the fertility of the soil in order to maintain yields. The agricultural and veterinary departments have this constantly in mind in introducing fertilizers, livestock, crop rotation and irrigation schemes, especially in the parts of the Province where soil fertility appears to be most threatened.

Stabilizing Crops.

16. For various reasons it is Government's policy to stabilize population wherever possible. Cashew, citrus and kapok trees will be a feature of development plans in several Districts and should prove a good influence for keeping families on their holdings. A stable population is not only easier to get at for purposes of instruction in better methods of cultivation, but, being tied to one piece of land, is more likely to care for the fertility of its soil and to conduct its farming with a long-term outlook.

Mechanical Cultivation.

17. Improved agriculture and mechanical cultivation offer perhaps the two most effective means of increasing output that are within the capacity of the individual. To double the acreage under cultivation would be a formidable undertaking but to double the output by improved yields with only a modest increase in acres will not be such a difficult task. The average African farmer cannot afford to buy a tractor and equipment as his own property but is able and willing to pay others to plough his land for him. The various pilot schemes already under way in the Province are designed to see if that system will work, what equipment is needed and how it should be used, what is the best size to be efficiently manageable and what the cost to the landowner must be to avoid making a loss.

18. All Districts in the Province already have, or are planning, mechanical cultivation schemes, and 1,200 acres of shamba land were ploughed in 1952 with tractors and ploughs operated by the Native Treasuries (Tunduru 105, Lindi 130, Masasi 148, Mikindani 255 and Newala 562). This total was not enough for the demand.

19. The basis of operation of the scheme is that when a suitable stretch of country has been found tractors and ploughing equipment owned by the Native Treasury are brought in. The bush is cleared by hand and the amount of time and labour involved in that operation governs the speed at which ploughing can proceed. It is therefore preferable to choose land without bush cover whenever possible. The block of land is ploughed mechanically and marked out in one-acre plots. These are let out for the season to peasant cultivators for a fee designed to cover the cost of ploughing which has now been fixed at forty shillings per acre throughout the Province to allow a margin of approximately twelve per cent in reserve against possible rises in costs. Considering the African farmer has never been accustomed to paying cash for help in working his land the response so far has been good and some tenants have applied for as much as six acres each.

20. It is now believed that a ploughing unit should comprise two tractors. Where the going is heavy this may have to be three to allow more concentration on breaking new ground. A unit should be able to plough five hundred acres of new land a year and turn the old land. On a four-year rotation a unit would thus cope with a steady 2,000 acres. When a pilot scheme reached that stage consideration would have to be given to up-grading it to an economic production unit. The tentative view at present is that for a full-scale project after that transition stage the aim should be to work with six units. This would be known as a "group" and would comprise twelve to eighteen tractors and equipment.

21. To avoid dispersion of effort and loss of working time in moving about, the group would prefer a concentrated area large enough to give it 12,000 acres under crop in four-year rotation, i.e. twenty-five to thirty thousand acres. Selection of sites is therefore important. There are four such areas in prospect at present, at Mahurunga and Chiumo on the Ruvuma in Mikindani and Newala Districts respectively (where the pilot schemes are), at Lake Kitere in the Mambi valley in Mikindani District and in the Mbwemkuru valley in Kilwa District. In addition there are a number of secondary sites in several Districts, suitable for smaller schemes. Rice is envisaged as the main crop in all of them. Apart from certain local considerations in the areas selected the principal advantages of this type of mechanical cultivation are:—

(i) it employs Africans at cultivation time on their own land instead of on somebody else's estate;

(ii) it provides a good working partnership between European, Asian and African in opening up new land;

(iii) it need not be confined to Africans: some Indian traders at Mahuta have already in fact applied for 1,000 acres of the Chiumo scheme.

If the four group schemes could be working by 1960 some 48,000 acres would have been added to the productive area of the Province and 30,000 tons of rice to its larder, enough to convert Tanganyika into a rice-exporting country. This figure has not been assumed however in the estimates of production by 1960. More rice mills might be needed. There is one in operation at Mingoyo and a new one has recently been licensed at Mtwara.

Marketing.

22. The markets are adequate in number for the present volume of production but there is room for a more efficient system of handling crops and cash in them. The number in each District varies from twenty-nine in Lindi to two in Songea but policy in the more populated areas is that markets should not be more than ten miles apart so that the cultivator need not travel more than five miles to his nearest.

23. Co-operative Societies will be an important development in rational marketing as growers acquire a greater sense of organization amongst themselves. Twenty primary societies marketing fire-cured tobacco through the Ngoni-Matengo Co-operative Marketing Union Ltd. and three societies marketing their members' coffee are the only co-operatives at present but the expanding cashew nut crop, the rice-growing on the mechanical cultivation schemes and the assisted farming on the O.F.C. African visiting tenant farms all offer scope for co-operative organization in due course. The pace cannot be forced however and no effort is made to form societies until there is a general desire to belong to them and there are enough trained African staff to run them. For the present the first concern is to see that there are enough efficiently run markets for the stimulation of trade in individual production.

24. The seasonal rush on the markets at harvest time presents a problem and experiments are being made in several Districts to seek a more efficient organization. Twenty thousand kilos of produce a day is a fair average for a busy market and as it is brought in about twenty kilos to a load this means a

thousand or more transactions in a day. It is no easy task to pass these people through the market after weighing and sorting their produce on arrival and collecting their dues from them in cash. Apart from other factors, market clerks of the required intelligence and honesty are hard to find.

Nevertheless many Africans now pay an alert attention to market prices and would like to see more Native Treasury money put into building markets. Although the African's leisurely ways hardly lend themselves to time and motion study, design is important and thought is being given to the layout of new markets to improve their functioning. They are recognized as a major part of plans for development of agriculture and doubling of the rate of dues on produce sold (to five per cent) is being contemplated as a means of increasing the funds to be spent on them. Turnover figures on the District markets month by month are given at Appendix A, current prices of produce sold on them at Appendix B and a table of the number of trading centres and trading licences at Appendix C.

25. The failure of African farmers to utilize the wheel has limited the amount of produce they can usefully grow for sale as the majority of them still rely upon their wives and children to help them carry their surplus crops to market on their heads. The average amount taken to market in 1952 by each farmer in Nachingwea District was seventy-one kilos, equal to four trips at an average of twenty kilos per load or as much as one hundred and twenty miles of walking in some cases. The comparable figure in 1960, if development plans are successful, will be 1,375 kilos per head or sixty-eight trips to market. To clear this produce on foot would be impracticable and experiments are already in hand to develop a standard type of handcart taking one hundred to one hundred and fifty kilos of produce to market at a time. This would reduce the sixty-eight trips in 1960 to thirteen or less. Money has been provided in the 1953 budgets of the Nachingwea and Newala Districts to produce locally made wooden bodies on pneumatic-tyred axle units for demonstration on Native Treasury farms or for sale to the people; in Nachingwea because the distances, and in Newala the quantities, are so great. The response of the people has been enthusiastic and if a successful design can be adopted in large numbers the handcart may make an important contribution to increased production.

26. A loaded wheel needs a fair track to run on and feeder lines for the handcarts are being planned from farms to the markets. These are not much of a problem in Newala, which is a compact District with reasonable communications, but a system of "District produce tracks" is being designed in Nachingwea where distances are greater. These would be narrow tracks for the passage of handcarts costing less than thirty pounds a mile which would be properly surveyed and constructed as they might well become the roads of the future. The main lines of communication for removal of produce from markets are most important. The railway, by charging lower rates than road transport, will make some cash crops a paying proposition upcountry where hitherto the cost of a long road haul to the coast has made them uneconomic. Better roads from producing areas can also help to increase exports and all District development plans give a high priority to road construction programmes.

PRODUCE INSPECTION AND GRADING.

27. The high prices on the markets in recent years have tended to make growers concentrate on quantity rather than quality and in consequence the rise in production has not been accompanied by an improvement in quality. Neither producer nor trader seems willing to accept any responsibility for quality. As a result the Southern Province has lost its market for some crops for which it once had a high reputation, and development plans are as much concerned with restoring that quality as with increasing export tonnages.

28. The traders' present practice, for example, of bulking beeswax brought into the markets degrades the lot, and the good clean wax worth six shillings or more a kilo fetches only the two shillings paid for the poor wax with which it is lumped together. Careless practices and bad marketing have done much to harm the potentially valuable beeswax industry. Africans destroy its future by killing the bees when they smoke them out of the trees and hives. The beeswax officer and his staff are making useful progress in teaching them to preserve the bees and prepare their wax properly.

29. Apart from initial grading of quality on the markets some crops are prone to deteriorate through insect infestation and plans are in hand for the erection of fumigation chambers at Mtwara to combat this. They will operate with carbon bisulphide and circulating fans and it is proposed when they are ready to make the treatment of beans, pulses and Colombo root compulsory. The latter is particularly susceptible to weevil and it is hoped by this means to recapture its former market in America where it failed to comply with the American Pure Food and Drugs Act. The European produce inspector and grader now stationed in Mtwara will supervise these chambers and it is hoped will find time to train African market inspectors in the Districts to keep an eye on the quality of produce brought in for sale.

30. Cashew nuts are another rapidly increasing crop frequently offered in poor quality because there has been no discrimination between good and bad nuts. Peirce, Baumann and Co. Ltd., a combination of two firms in the cashew trade in India, have plans to open a factory in Mtwara for processing cashew nuts and exporting them direct to U.S.A. thereby obviating the present necessity of sending them to India for this purpose. They should be able to exercise an influence on the quality of the crop through the conditioning centres they propose to set up in the growing areas to feed the factory with graded nuts.

31. Co-operative Societies also provide a means of controlling the quality of individual produce marketed through them, as with the native fire-cured tobacco in Songea, and this might prove possible later with the cashew crops. Since the producer now gets a very fair return for his crops, Government and the Native Authorities have a strong case for enforcement of standards of quality until such time as the trade itself develops enough sense of responsibility to look after its own interests.

B. Animal Husbandry

TSETSE.

32. Apart from Songea the tsetse fly position is not believed now to be as bad as was formerly thought, and if further survey enables fly to be removed from areas suitable for cattle the livestock industry may begin to fill the place

urgently needed for it in the Province's economy. There are a number of fly-free or light-fly areas which can be developed without difficulty, particularly in the eastern parts of the Nachingwea and Masasi Districts. This is convenient as the intention is to concentrate at first on the eastern half of the Province where there is a larger population and therefore greater need of protein diet. The Provincial Tsetse Officer stationed at Nachingwea will supervise these surveys and in particular will watch that the introduction of livestock to newly cleared areas does not re-attract tsetse to the source of food thus provided.

33. The extensive belts of fly extending westward from Nachingwea through Tunduru into Songea have no major significance at present since much of the land is uninhabited but future settlement in that country will have to take account of them and a problem of some concern to development has already arisen in the Songea District. Reference to the map shows how the main belt of *G. morsitans* from the east has extended forty miles westward across the Songea-Gumbiro road. This has occurred since 1940, which is a high rate of advance for fly, and cattle could only be kept now in that seventy-five square mile block if stall fed. This presents a serious threat to the Ngaka coalfields area and even down to Lake Nyasa along the Ruhuhu river, a stretch of country embracing much valuable ranching land in the Ruhuhu and Rutikira valleys.

34. The fly position has been surveyed in detail and results in experimental clearings at Njalila suggest that a full scale reclamation scheme would take two years to complete at a cost of about £15,000. Cattle ranching in the area thus cleared is unlikely to be an economic proposition however unless a local demand for meat is created by the opening of the coalfields at Ngaka or transport for livestock to the coast is provided by the extension of the railway to Songea. On the other hand, apart from ranching possibilities, a reclamation scheme appears to be necessary if other developments in the District, particularly of a revived native livestock industry, are to go ahead.

LIVESTOCK.

35. The diet of all races in the Province, particularly the eastern half, is deficient in protein probably to a greater extent than in any other part of Tanganyika. The rearing of slaughter stock is therefore a matter of first importance. Development plans provide for (a) introduction of livestock in all suitable areas; (b) restoration of a former thriving livestock population in Songea and (c) clearance of fly and provision of water to enable breeding stock to be introduced into new areas. One advantage is that the tribes of the Southern Province, although not cattle breeders by tradition, have no inhibitions of religion or tribal custom about their cattle and would not need persuading, as some tribes do, to treat their herds as articles of trade to be bought and sold.

36. After control of tsetse fly the next most important requisite for encouragement of livestock breeding is the provision of water supplies, discussed also in Chapter VI. In general the rainfall of the Province is adequate but there is much work to be done in conserving the water and providing suitable supplies for cattle. It is hoped to expand the staff of the Water Development Department in the Province for that purpose.

37. The heavy belt of tsetse in Tunduru District provides a barrier conveniently dividing the Province into east and west for livestock development. Cattle have been in the west (Songea) section for years and conditions are already proven within fairly well defined limits. The eastern section, however, has greater priority and possibly greater potential also, particularly as it is believed to be free of east coast fever at present. The Veterinary Department is bringing a supply of breeding stock in, chiefly for Masasi and Nachingwea Districts to begin with where prospects are the most favourable and where there are already some herds being successfully kept by Native Authorities, the O.F.C., the Missions and private Africans. After a period of conditioning on the Mkata plains they are shipped from Dar es Salaam to Mkwaya but transport by the regular steamship services is difficult and expensive (a recent consignment by this means cost Shs. 121/80 per head in transport as far as Mkwaya only, as against a purchase price of Shs. 130/-). Unfortunately landing craft, which are the most suitable form of transport for livestock, are not available for this purpose at present.

38. The following are brief notes on the present position in the Districts concerned.

Lindi.—A dairy, managed for the time being by the Veterinary Department, has been opened and is producing over four hundred pints of milk a day for the township. It will be rebuilt in permanent materials and extended. Meanwhile it is proving a useful focus for animal husbandry in the District and has influenced some sisal estates to introduce cattle, in addition to some Asian and African-owned beasts.

Mikindani.—A Government dairy on the Lindi pattern is being established at Mtwara. With the exception of two small herds near Mtwara, livestock prospects in this District are not good for the present as there is too much tsetse.

Newala.—The whole Makonde Plateau, although waterless, is believed to be fly-free and the Wamakonde are interested in cattle, but the extensive cultivation, thicket growth and lack of water on the plateau limit the areas suitable for cattle at present.

Masasi.—There is little or no fly and much good grazing. Subject to the provision of water supplies prospects are good, particularly in the triangle between Masasi, Lulindi and Chidya. There is already a Native Authority herd and young stock being brought into the District is being bought by Africans.

Nachingwea.—The eastern and southern areas seem to be fly-free. A Native Authority herd has been kept for some time at Ruponda with no history of disease and there are others owned by Africans and the Mission at Mnero. The O.F.C. farms provide great scope and mixed farming is being introduced. A herd of over a hundred head has been successfully kept on Farm 1 for two years.

Songea.—Although the stock population in Songea has declined in recent years through the spread of tsetse and east coast fever the District's good grazing and abundant water give it a good capacity for livestock if these difficulties can be overcome.

The following are comparative figures:—

Year	Cattle	Sheep	Goats	Pigs
1923	9,358 ...	701 ...	25,808 ...	45
1929	18,890 ...	1,771 ...	144,789 ...	63
1931	48,674 ...	311 ...	137,978 ...	301
1933	11,370 ...	598 ...	29,118 ...	320
1950	12,721 ...	— ...	— ...	—
1951	15,731 ...	— ...	— ...	—
1952	18,014 ...	3,437 ...	24,560 ...	1,004

It will be seen that there now appears to be an annual increase of about 3,000 head of cattle and that sheep and pigs are increasing also. Veterinary surveys will be carried out to ensure that the rising stock population is protected against the known endemic diseases of the area but it is already known that the present total of 18,000 head could be raised with care to 75,000. The principal areas suitable for livestock are (a) the Matengo Highlands, seven hundred square miles, capacity at least 20,000 head; (b) the fly-free area of Angoni, at least one thousand square miles, capacity not less than 25,000 head and (c) the Ruhuhu and Rutikira valleys, eight hundred square miles, capacity at least 20,000 head.

39. There is also scope for a large increase in the number of goats and pigs in the Province. The former, besides being less susceptible to tsetse fly, would be an additional supply of meat for Africans, and the latter would be acceptable in Songea, Masasi and Newala districts which are largely Christian and therefore free of Muslim religious scruples about pigs.

C. Grain Storage

40. The Grain Storage Department's depots at Lindi, Mikindani and Mtama have a capacity of 2,000 tons each and are located near the ports for convenience of receiving imports of grain and exporting surplus stocks not required within the Province. With the higher production in prospect it may be necessary for depots of similar 2,000-ton capacity to be built at Mtwara and Nachingwea also.

41. The valuable territorial insurance against food shortage provided by the department does not always appear to be fully appreciated by producers or traders, perhaps from dislike of Government participation in a trade formerly left in private hands. Some Africans for example complain that the department buys up the produce but never has any to sell back when it is wanted, failing to realize that the department only claims to buy the true surplus above local needs and does not expect to have to sell it back again. Government is satisfied that the department is necessary in present conditions but in order to secure wider understanding and acceptance of its functions it is thought that there might be some value in publishing a simple pamphlet in Swahili to describe the objects of the department and how it works.

D. Vermin Destruction

42. It is estimated that not less than twenty per cent of African production in the Southern Province, equal to at least 20,000 tons, is lost every year by depredations of vermin, mainly baboon and rats. Protection against them has to be a local responsibility and the Native Authorities have therefore the choice of organizing communal poisoning or trapping drives or employing trained

Chiumo Mechanical Cultivation Scheme

adult literacy campaigns may have appreciable influence in raising agricultural production by making the farmer appreciate the force of advice given to him about his crops, and also by giving him more desire for the material rewards of more intelligent and industrious farming.

47. Finally, the promise of freedom from want is itself a substantial incentive to increased production. "Famine" in fact, as it used to be known, no longer exists in the Southern Province. Localized food shortages do occur sometimes as a result of failure of the rains or other natural causes but they are met by drawing on the reserves elsewhere in the Province. Cassava is the best of these because it can be kept in the ground as well as in store and is interchangeable as a food or cash crop. Nevertheless even meeting shortages by this means is a troublesome and expensive business, and every effort is therefore made to convince the ordinary cultivator that freedom from recurrent local food shortages will be simple and certain if proper attention is paid to increased production particularly of food crops before cash crops.

CHAPTER III

Capital Development

48. It is Government policy to encourage the alienation of land for development enterprise in any part of the Province where there would be no substantial disturbance of African land tenure. There is no shortage of such land and possibilities for agricultural, mineral, commercial and capital development are present in great variety, depending in some cases however on better communications to make them economic. Many of them will depend upon further survey by Government staff or examination by interested parties but details are given in this chapter of some of those already under way or in early prospect.

A. Mineral Developments

COAL.

49. The deposits in the coalfields of the Ruhuhu Basin, in Songea District, are large enough to change the whole economy of the Province. The drilling survey carried out by the Colonial Development Corporation has so far shown 216,000,000 long tons of proved extractable coal reserves in the combined coalfields. The coal is comparable in quality with other Southern Hemisphere coals, e.g. in the Wankie Coalfields.

The working of the Ruhuhu coal will depend essentially on a railway or some other form of suitable transport, the capital cost of which cannot be contemplated unless other freight can be found in adequate quantity in addition to the coal. There are two possible routes for a railway indicated by the preliminary engineering survey*. The first would connect the Coalfields to the Southern Railway at Lumesule, a distance of 289 miles (from Ngaka) at an estimated cost of £8,965,000. The second would run from the coalfields through Njombe and the Kilombero Valley, to the Central Line at Kilosa, a distance of four hundred and eight-five miles at an estimated cost of £19,104,000.

IRON.

50. Interest in the titaniferous iron ore at Liganga in Njombe District, centres in the possibility of exploiting the titanium and the iron with a possibility of steel production in conjunction with the Ruhuhu coal. The exploitation of these deposits will be dependent upon the working of the coalfields and will be impossible without communications. The extension of the Southern Railway to Songea and Njombe has to be considered in relation to the Rhodesian rail link which has been studied by Sir Alexander Gibb and Partners and Overseas Consultants Inc.†

*East African Railways and Harbours "Report on an engineering survey of a rail link between the East African and Rhodesian railway systems". June, 1952.

†Colonial Office: "Report on Central African rail link Development Survey". 2 vols. June, 1952.

Although no conclusions can be reached yet, it is clear that the Songea and Njombe mineral areas hold the key to large-scale industrial development in the southern area of Tanganyika and that some adjustment of Provincial boundaries may become necessary on account of it.

GRAPHITE.

51. There are deposits of good quality graphite in the Nachingwea area but these cannot compete economically with the enormous deposits of high grade graphite in Madagascar. Nevertheless some interest is being shown in these deposits.

MICA.

52. Mica of excellent quality is being mined by "Mica Mining (Tanganyika) Limited" at Makanjiro in Lindi District and active interest is being shown by this firm and others in prospecting for other deposits.

WORKSHOPS.

53. The O.F.C.'s Mechanical Workshops at Nachingwea are well equipped and centrally situated on rail and road. Some use is already made of them by Government Departments and private interests but they could also provide valuable facilities for the maintenance of the agricultural, mining and water engineering machinery required for development.

B. Non-Mineral Developments

HYDRO-ELECTRIC POWER.

54. Both the Ruvuma and Ruhuhu rivers offer scope for hydro-electric power generation but there is no requirement for it in prospect at present. The Ruvuma site is at the Sunda Rapids (approx. 11.22.S., 37.15 E.) where the dry season flow is estimated at 4,000 cusecs and the horse-power available in the region of 15,000. The two sites in the Ruhuhu Gorge at Mahanje and Ngingama would not provide the 125,000 k.w. that would be needed if electric power were to be used for smelting ore at Liganga.

In addition to the two hundred and sixteen metric tons of coal mentioned above however, there are large reserves of low grade coal suitable for power generation on site. Contrary to the popular conception such power is usually much cheaper than hydro-electric power owing to the great capital cost of the latter. There would be no question of using hydro-electric power at Liganga with so much cheap coal available which could probably be mined at fifteen to twenty shillings a ton and would provide power at low cost.

TIMBER.

55. The principal timber enterprise in the Province is the 1,500 square miles concession worked by Steel Bros. (Tanganyika Forests) Ltd. on the Rondo plateau. Their extraction of the *mvule* stands is expected to take twenty years but there are also *mninga* stands to the north and west of the plateau. The mill is turning out 6,000 tons of sawn timber a year and some is also exported in the log.

Capital Development: Timber at the Rondo Saw Mill

Planting Tobacco Seed Beds at Mgwina

56. There are mills working in other parts of the Province also. Mackenzie's Sawmills Ltd. have opened a new concession in Kilwa District this year with a potential sustained output of 2,000 tons a year. Grewall's (Lindi) Ltd. are consistent producers at about two hundred tons per month. The one drawback to this trade is that shippers regard timber as awkward cargo and there have been difficulties in arranging export shipments.

SISAL.

57. Ample land is available for new sisal estates in the coastal belt of Kilwa and in the Nachingwea and Tunduru districts, subject to soils being suitable and water available. Some uncertainty about the wisdom of opening new estates was created by the recent fall in the price of sisal but the present level should give a satisfactory return to well-run estates and several firms are known to be actively interested in new land in the Province for sisal.

CASHEW.

58. The volume of cashew nuts exported from the Province has risen from 175 tons in 1942 to 9,740 tons in 1952. The price is comparatively high and as far as can be foreseen the market will continue to offer a fair return to the producer. The cashew tree grows well in most parts of the Province except in Songea District, the majority of which is above the limiting altitude of 2,000 feet. Apart from the kernels, the cashew tree produces a variety of by-products notably the cashew shell liquid which is in demand in America and Britain for industrial purposes.

59. Production of cashew nuts is expected to approach 30,000 tons by 1960. Non-native enterprise is also being attracted to this profitable crop and Peirce, Baumann and Co. Ltd., who represent interests with long experience of cashew in India, have established a depot for handling the crop at Mtama in Lindi District and are proposing to build factories for processing the nuts.

TOBACCO.

60. There are two kinds of tobacco grown in the Province; fire-cured which is grown by Africans in Songea District and marketed by the Ngoni-Matengo Co-operative Marketing Union Ltd. and flue-cured which is at present only grown on non-native estates as it is more difficult to process and requires capital outlay on curing barns, grading sheds, etc. The flue-cured variety is a valuable crop and there is now sufficient evidence to suggest that, with proper cultivation and choice of seed, it will grow well in parts of the Songea and Tunduru Districts.

61. Twenty thousand acres of land for flue-cured tobacco have been surveyed at Mgwina, south-east of Songea. Poor communications are a deterrent at present but a survey has been made of a new road alignment from Mgwina to the Lindi-Songea road at Jumbe Salim's. This road would be forty-six miles long, fifty-seven miles shorter than the present route via Luegu, and would certainly make Mgwina a more attractive proposition to tobacco farmers.

62. Other estates have been surveyed in a block of four hundred and eighty square miles between the Muhuwesi and Mtetesi rivers in Tunduru District lying between the Lindi-Songea road in the south and the provisional trace of the railway extension west of Lumesule in the north. Having better

communications this area has attracted more attention and six farms are already in occupation, with others in course of allocation. Some good tobacco has also been produced on a farm astride the main road at Nampungu, twenty-one miles west of Tunduru. Although it is early yet to draw conclusions about the crop there appear to be possibilities for a flue-cured tobacco industry in the Songea and Tunduru districts and at a later date it may be found advisable to further its development by establishing a Southern Province Non-native Tobacco Board under the Tobacco (Non-Native Industry) Ordinance, Cap. 149.

LIVESTOCK.

63. Plans for development of the livestock industry will depend upon the results of further veterinary, tsetse and water surveys but details have been given in Chapter II of the scope for capital enterprise in this direction in the Masasi and Songea districts. The Ruhuhu and Rutikira valleys in the latter will be a particularly attractive proposition if the coal and iron deposits are opened up.

CELLULOSE.

64. An interesting recent development is the application by Cellulose Fibre (Tanganyika) Ltd., for a licence to process fibre from the bark of baobab trees for the manufacture of cellulose, a valuable industrial raw material. If the process proves successful it should have much scope as baobabs are very numerous and no other use has been found for them yet. The company's depot in Lindi is now completed and from an initial output of two hundred tons a month of baled cellulose fibre is expected to work up to full production capacity of 1,000 tons a month.

AGRICULTURE.

65. In several parts of the Province there is land which appears to be suitable for alienation but it is not possible to compile a list as detailed surveys covering the whole of each District have not yet been carried out to define the extent of alienable land. At Nanyindwa, ten miles from Masasi, there is a stretch of at least 35,000 acres of flat land suitable for mechanized cultivation, which appears to warrant further examination subject to the finding of satisfactory water supplies. It is near the Masasi-Nachingwea road and not more than fifteen miles from the nearest point on the railway. Kilwa District also has suitable land, particularly in its coastal belt.

66. Possibly the most attractive proposition for immediate development by private enterprise lies in the 45,000 acres which have been felled for the O.F.C. but are now expected to be surplus to the Corporation's requirements. This area is well served by road, rail and air communications and if taken up before regeneration of the bush has gone too far will cost appreciably less in outlay on initial development.

COMMERCIAL ENTERPRISE.

67. There are countless opportunities for commercial development in the more populated parts of the Province. Retail trade and the supply of consumer goods generally are far from adequate, and the possibilities offered by the needs of new capital enterprise and of an African population earning steadily rising incomes need no emphasis. The importance of better communications for the encouragement of such trade activity also needs no emphasis.

CHAPTER IV

Assisted Development

68. There are some forms of development of virgin bush, requiring experience and resources beyond the reach of the individual or of any but the largest capitalized undertakings, in which Government has a more active part to play than in the encouragement of more commercially attractive enterprises. These are the large areas of potentially fertile land in the Southern Province which are suitable for agricultural development, but which call for specialist staff and equipment to carry out the essential preliminary surveys of topography, rainfall, soil and vegetation, and the subsequent land clearing, contouring, drainage and building works.

69. The Overseas Food Corporation has made a study of the methods and costs of mechanized pioneer agriculture, for the purpose of bringing such tracts of land into economic production which otherwise seem likely to lie idle.

OVERSEAS FOOD CORPORATION.

70. In spite of progressive reductions since 1950 Nachingwea still remains the largest of the three O.F.C. units in Tanganyika, although the intention published in the 1947 White Paper of having 420,000 acres under cultivation producing 150,000 tons of export crops a year by 1957 has now been modified to 20,000 acres and 6,000 tons respectively. The principal lesson of the failure of the original plan was that large-scale mechanized cultivation of virgin bush land needs detailed agricultural survey and study of techniques before field work is committed to any production programme. The object of the O.F.C.'s work within its revised budget until 1957 will be to investigate these methods of development and to find out which crops can be grown with economic success under the Corporation's farming system.

71. Stripped of its former heavy capitalization and high wastage rate the O.F.C. is now accumulating detailed information on the utilization of labour and equipment in this specialized form of development, in order to establish standard techniques and costings. Instead of the original conception of large acreages under a single type annual crop, which is now regarded as unsound, mixed farming under the closer control of each farm manager is being adopted on the seventeen farms. The standard of agriculture among them is acknowledged now to be high. The following brief notes on the different types of farms show how the experimental programme is being put into practice.

Production Farms.—One thousand to two thousand acres, for study of the general economy and organization of different acreages under crop.

Costing Farms.—Five hundred acres, for detailed study of the utilization of labour, tractors and equipment.

Development Farm for study of the technique and cost of developing new land in terms of individual farms as opposed to the former large-scale clearing of the whole O.F.C. area.

72. Two other types of farm have particular interest as a means of encouraging individual settlement on new land. The *settlement farms*, approximately 1,200 acres, enable young energetic settlers to be placed on farms who lack the capital to undertake initial development themselves. The Corporation provides the capital services and costs are carefully budgeted. The present three settlement farmers are in the employ of the O.F.C. but are allowed considerable independence in their farming. Their experience will enable the average capital cost of developing such farms to be calculated and later a scheme may be drawn up for offering similar tenancies to other settlers on the ample land available for this purpose within the 150,000 acres of the O.F.C. Master Agreement area.

73. The *African visiting tenant* farms are an attempt to introduce African peasant farmers to economically productive—as opposed to subsistence—cultivation on acreages larger than the average shamba holding. The thirty of these farms already occupied average about twenty acres with about twelve acres under actual cultivation and are so arranged as to lend themselves to mechanical ploughing every year. The O.F.C. does the ploughing, supplies selected seed strains and exercises general supervision. It also purchases the whole crop and after deducting the cost of the house, seed, water supplies, transport and mechanical cultivation, plus five per cent as a return on its outlay, hands over to each farmer the balance of his proceeds. These are expected to average about five hundred shillings a year net, in addition to the farmer's and his family's subsistence for the year.

74. Results in the 1953 season were satisfactory in the light of those expectations and the number of farms is being increased to sixty for the 1954 season. They have all been allocated.

75. Although the Nachingwea Unit of the O.F.C. has undergone reductions and modifications it remains a separate organization within its own area of development. The techniques which it evolves will no doubt form the pattern for similar work elsewhere but it seems likely that there will be schemes of assisted development in other parts of the Province the initiative and responsibility for which will lie with Government.

76. It has been suggested that this responsibility might be vested in a Provincial Development Board. There might possibly be a case for such a body in the future if development were to assume large enough proportions but it is Government's present view that it would offer no advantage at this stage. It is regarded as the function of Provincial and District teams to promote development, in conjunction with the Land Utilization Committee where land matters are involved. Nevertheless in the initial stages of formulation of District development plans within the Provincial plan there may be some advantage in having an officer at Provincial headquarters charged with full-time responsibility for the co-ordination of planning, general supervision of field work and collation and interpretation of statistical information necessary to proper execution of development schemes.

CHAPTER V

Labour

LABOUR.

77. The table at Appendix E showing distribution of employment by districts and size of undertakings is derived from the results of the 1952 African Labour Enumeration. The number of men, women and juveniles in gainful employment varies according to seasonal demands but the peak number under present conditions is approximately 41,000 comprising 7,000 in Government and local authorities, 12,500 in sisal, 1,800 in O.F.C., 2,600 in construction and operation of railways and harbours, 1,500 in timber production and the balance of 15,600 in various miscellaneous agricultural, commercial or industrial employments.

SUPPLY AND MIGRATION.

78. The supply of labour both from local sources and by immigration of natives from Portuguese East Africa at present exceeds requirements and there is a substantial annual migration of labour to employment outside the Province. In 1952, for example, some 7,000 workers accompanied by an equivalent number of dependants, went to sisal estates elsewhere in the Territory and a number of other workers, thought to be about 2,000 went from the Songea District to mining employment in Northern Rhodesia and South Africa. There is also a free influx of Mawia tribesmen from Portuguese East Africa, many of whom pass through the Southern Province in transit to employment in the Tanga Province mainly in the sisal industry. In 1952 some 5,000 Mawia, accompanied by approximately 4,500 dependants, immigrated in this manner. Of these approximately 3,500 and 3,300 respectively were in transit to employment on sisal estates outside the Province. The majority of the remainder took up employment in the Southern Province. This movement thus also makes a steady contribution to population increase. The 1948 African population census showed that there were then 9,578 male and 9,687 female migrant Mawia resident in the Province. It is probable that since 1948 these numbers have increased.

79. On the assumption that industrial, commercial and agricultural development of the Province during the period 1953-60 follows the lines indicated elsewhere in this report, the increase in demand for labour over that period has been estimated at approximately 20,000 distributed as follows:—

(i) Agricultural industry, including alienated estates	7,500
(ii) Sisal within Southern Province	6,000
(iii) Government and local authorities	2,500
(iv) Mineral workings	1,500
(v) Railways and harbours, construction and running	1,000
(vi) Commerce and others	1,000
(vii) Timber	500
	20,000

If this estimate is realized the total labour force required by 1960 would be approximately 61,000. If the increase in the indigenous population is maintained at its present rate it should provide between 8,000 and 10,000 of the additional workers required.

80. Any remaining shortfall in the labour supply would probably be met from other sources, such as an increase in the number of immigrant Mawia or a reduction in the number of workers leaving the Province to seek employment in Northern Rhodesia, South Africa or elsewhere in Tanganyika.

81. It would be unwise at this stage to make a detailed forecast of whether the labour supply will be equal to the demand created by development, or to predict that there will be a shortage of labour since it has been found in other parts of the territory that a steady demand for labour usually attracts an adequate supply of workers.

Industrial Health.

82. Industrial health is not a problem of any magnitude in the Southern Province at present. The incidence of leprosy is known to be high but in addition to several leper settlements there are clinics for out-patient treatment in the worst-affected areas and the disease is not considered to have any significant effect on labour supply. The Province however is not well served with medical stations and an expansion of Government medical services will be necessary to meet the needs of industrial development.

CHAPTER VI

Forestry and Water

FORESTRY.

83. Reference has been made in Chapter III to the commercial extraction of timber from Southern Province forests at a rate estimated to rise by 1960 to eleven to twelve thousand tons a year. It is estimated that after meeting local needs the surplus available for export would be 9,000 tons a year.

The O.F.C. has a contract to supply wood fuel to the Southern Railway and supplies of pit props for the Songea coalfields could be obtained from local *miombo* stands. Sawn timber for internal use and export is being milled by Steel Bros., MacKenzies and Grewalls mentioned elsewhere in this report. Although Steel Bros. expect to cut out all the profitable *mvule* in their concession in about twenty years there are also *mninga* stands, and the Rondo plateau seems likely to remain the most important timber area economically for some years, probably requiring a rest later for regeneration and the Forest Department plantations to restore the stands.

84. Apart however from the encouragement of commercial utilization of forest produce both for the internal needs of the Province and for export the Forest Department's first task is "to demarcate and reserve in perpetuity, for the benefit of present and future inhabitants of the country sufficient forested land or land capable of afforestation to preserve or improve local climates and water supplies, stabilize land which is liable to deterioration, and provide a sustained yield of forest produce of all kinds for internal use and also for export."*

85. Since "Government is anxious that the percentage of completed reservations shall, by 1962, amount to not less than eight per cent of the total land and swamp area of the territory . . ."† development plans in each District will require very careful thought to be able to set this proportion of land aside from agricultural production. Sparsely populated Districts like Tunduru and Nachingwea may have to keep as much as thirty per cent under forest reserve to compensate for others only able to carry much less. Moreover in order to sustain an annual yield of eleven to twelve thousand tons it would be necessary to reserve at least ten per cent of the Province. Taking into account the additional needs of protection reserves and supplies of fuel and hut building materials it is the Forest Department's view that at least fifteen to twenty per cent of the Province should be put under forest reserve. The present area under reserve is 0·6 per cent. For comparison with this target it may be noted that in the Western Province more than thirty per cent of Mpanda District is already reserved and agreement has been reached to the reservation of more than fifty per cent of Tabora District.

*Legislative Council of Tanganyika. Sessional Paper No. 1—1953. "Forest Policy", Government Printer, Dar es Salaam.

†Ibid.

Water.

86. In spite of adequate rainfall, three sizeable rivers (the Ruvuma, Lukuledi and Mbwemkuru) and abundant permanent streams in Tunduru and Songea Districts, there are many years of survey and engineering work to be done before the water supplies of the Province will enable its resources to be fully developed. In every District there are development plans dependent in greater or lesser degree on provision of water; African production on the Makonde plateau, livestock in the Lulindi-Masasi-Chidya triangle, alienation at Nanyindwa, settlement farms at Nachingwea, tobacco estates at Tunduru and watering of ships at Mtwara to name but a few of the more important ones.

87. In the past the limited resources of the Water Development Department have had to be devoted to more urgent work in other parts of the territory with the result that it has only been possible to post one Divisional Engineer of the department to the Southern Province. He has not been able to cover the whole Province but it is now hoped that the water development staff will be substantially increased in 1954 and a start made on the provincial programme of works. The largest of these at present planned is the scheme to provide water on the Makonde plateau which is discussed in the following paragraphs.

The "Major Makonde Scheme".

88. The Makonde plateau, which comprises most of the Newala District, has the highest population density in the Southern Province and the highest agricultural productivity and yet, being of permeous sandstone to a depth of about 1,200 feet, has very little water on it. The meagre supplies are at (a) Lake Meda near Liteho which normally has permanent water but has been known to dry up; (b) a few wells in the Kitangari depression; (c) Lake Tandahimba down the Tandahimba valley which has permanent water and (d) a concrete tank at Mkwedu with a catchment area of 33,000 square feet, and 71,000-gallon capacity, filled annually by the rains. The closest settlement on the plateau is clustered round these water supplies but none of them is adequate to sustain a large population.

89. Some of the people in other parts consume the whole of an eight-hour day fetching water from springs in the plain below or from the Lukuledi river to the north of the plateau which has a dry season flow of ten cusecs or from the Ruvuma to the south with some 3,500 cusecs. The release of the populace from this wasteful drudgery is thus both a desirable social service and an essential first step in plans for development of African production in the Newala District.

90. The first water project of any magnitude in the Province was that recently built by the Water Development Department at a cost of £18,000 for the supply of water to the area around Newala Minor Settlement. Sixteen thousand gallons a day are pumped 1,200 feet up from the Newala Wells below the escarpment to be sold from booths at ten cents a four-gallon tin. The sale price has to be calculated to allow for a considerable drop in sales during the rainy season. It may be possible to extend this supply later to the settlements north of Newala but as this supply absorbs over seventy-five per cent of the water from the wells its scope is limited.

91. The ultimate object of the Major Makonde Scheme is to provide water for domestic use over the whole 1,200 square miles of the plateau, many parts of which are very sparsely populated as a direct result of lack of water. Some idea of the scope of this unusual project is given by the fact that the first phase would involve the pumping of 100,000 gallons of water daily through a vertical lift of 1,510 feet and its distribution throughout a quarter of the plateau, namely an area of three hundred square miles at its southern side where the population is estimated to be 100,000. Eventually the supply may be extended to cover the whole plateau but this would necessitate the development of other sources of water which lie to the north of the plateau.

92. Whilst this proposed first phase is being examined in greater detail a full agricultural survey will be necessary to investigate the land to be opened up by it and to estimate the long-term sustained potentialities of the plateau as a whole.

93. Until technical details of the scheme are approved it will not be possible to estimate its capital cost nor to decide on a division of responsibility between the Central Government and the Local Authorities. It will be intended, however, that once established it should be self-supporting and it is likely that the most acceptable arrangement will be to place its management in the hands of a self-accounting Water Board similar to the Metropolitan Water Board in London. In addition to the public service provided by the water supply such an arrangement would also have important political significance if the African population, either individually or through the Native Treasuries, were to contribute towards the capital cost of the scheme by becoming share-holders in the Board.

CHAPTER VII

Communications

ROADS.

94. Better communications are the first priority in Southern Province Development plans, particularly on the roads, but the Province's needs have to be viewed in a wider context and construction of new roads depends upon the place allotted to them in a territorial priority list. Attention however is being paid to the two most important routes, the Lindi-Songea and the Mtwara-Dar es Salaam roads. No. 1 Road Construction Unit of the Public Works Department is rebuilding the Lindi-Mingoyo section of the Lindi-Songea road. The intention is to bituminize the first section of it to provide a good connection between Lindi and railhead at Mkwaya. How far the rebuilding work will be carried west of Mingoyo will depend on how requirements appear when the railway is established. The preliminary survey of a new alignment of the main road from Dar es Salaam is in hand. This will be routed to Mtwara and is expected to cross the Lindi-Songea road near Mingoyo. Its construction is not yet in prospect however as higher priority has been accorded to other roads elsewhere in the territory. A final decision on its alignment has not yet been taken but south of the Rufiji it is likely to be further inland than the present Dar es Salaam-Lindi road which traverses black cotton soil over much of its length and is closed annually during the rains. The preliminary survey suggests a route which could provide a branch road through Milola and Ruangwa to Nachingwea.

95. The following can be classified as the main roads of the Province:—

(i) Lindi-Songea (386 miles).
(ii) Songea-Mbamba Bay (110 miles).
(iii) Songea-Njombe (via Ngaka) (128 miles approximately).
(iv) Mtwara-Newala-Masasi (120 miles).
(v) Mtwara-Mingoyo-Lindi (70 miles).
(vi) Lindi-Kilwa-Dar es Salaam (295 miles on present alignment) (147 miles to Provincial border).
(vii) Newala-Mtama (45 miles).
(viii) Masasi-Nachingwea (33 miles).
(ix) Nachingwea-Nanganga (29 miles).
(x) Main road (Lindi/Songea)-Lumesule (23 miles approximately).

96. Of the above list the following are new roads under survey or construction:—

(i) Lindi-Songea:
  (a) Lindi-Mtama section.
  (b) Jumbe Salim's-Mgwiha section.
(ii) Songea-Njombe (via Ngaka).
(iii) Mtwara-Newala-Masasi:
  (a) Mtwara-Nanguruwe section.
  (b) Mahuta-Masasi section.
(iv) Mtwara-Lindi-Dar es Salaam.
(v) Lumesule road via Mindu.

97. Surveys of these roads have been carried out by a private firm, Messrs. C. D. Graham and Co., of Dar es Salaam. The position on them at present is as follows:—

(i) Lindi-Nanganga: final survey: complete.
(ii) Jumbe Salim's-Mgwina: preliminary survey: complete.
(iii) Songea-Ngaka-Njombe: preliminary survey: complete.
(iv) Mtwara-Masasi: realignment surveys: complete.
(v) Mtwara-Lindi-Dar es Salaam: preliminary survey in hand.
(vi) Lumesule road: final survey: complete.

The Mgwina-Jumbe Salim's alignment (forty-six miles) would bring Mgwina fifty-seven miles nearer to railhead than by the present route via Luegu, and should be an important factor in opening up the Mgwina area for tobacco production. If the railway were extended to Songea it would follow the line of the present main road between Matemanga and Songea. This runs along a narrow ridge on which there would not be room for both rail and road and it is therefore probable that the road through Mgwina would have to be developed as the new main road. The distance between Jumbe Salim's and Songea by that route is only four miles longer than the present main road.

98. The following tables give typical daily tonnages over some of these roads. They are the daily averages observed during October-November, 1952.

	Tons
Lindi-Songea road:	
Lindi-Mingoyo	902
Mingoyo-Mtama	522
Mtama-Nanganga	720
Nanganga-Masasi	400
Masasi-Tunduru	185
Tunduru-Matemanga	117
Matemanga-Songea	87
Lindi-Mikindani-Mtwara road:	
Mingoyo-Mikindani	629
Mikindani-Mtwara	583
Lindi-Kilwa-Dar es Salaam road:	
Lindi-Kilwa passing Ras Bura	609
Lindi-Kilwa passing Mbwemkuru	163
Lindi-Dar es Salaam passing Nangaruku	160
Songea-Njombe road (old road)	32
Songea-Mbamba Bay road	116
Masasi-Newala road	131
Newala-Mikindani-Mtwara road	220
Masasi-Nachingwea road	47
Newala-Mtama road	269

RUVUMA RIVER.

99. The mouth of the Ruvuma river is only twenty miles by road from the port of Mtwara and enquiries are being made to ascertain for how much of its length it would be navigable to suitable river craft. Its use as a waterway has perhaps not attracted attention in the past because there was not much production in the area served by it. The potentialities of its fertile basin for large scale production of rice, citrus fruits and cashew however are now being recognized, and if agreement could be reached with the Government of Portuguese East Africa there seems likely to be increasing scope far water-borne freight on the river, feeding into Mtwara. One group of merchants is already interested in starting such a service.

RAILWAYS.

100. In economic potential the Southern Railway dominates every other project in the Southern Province, because of the development which may follow it. The section already under construction, from Mtwara to Lumesule is two hundred and two miles in length. The first section of one hundred and

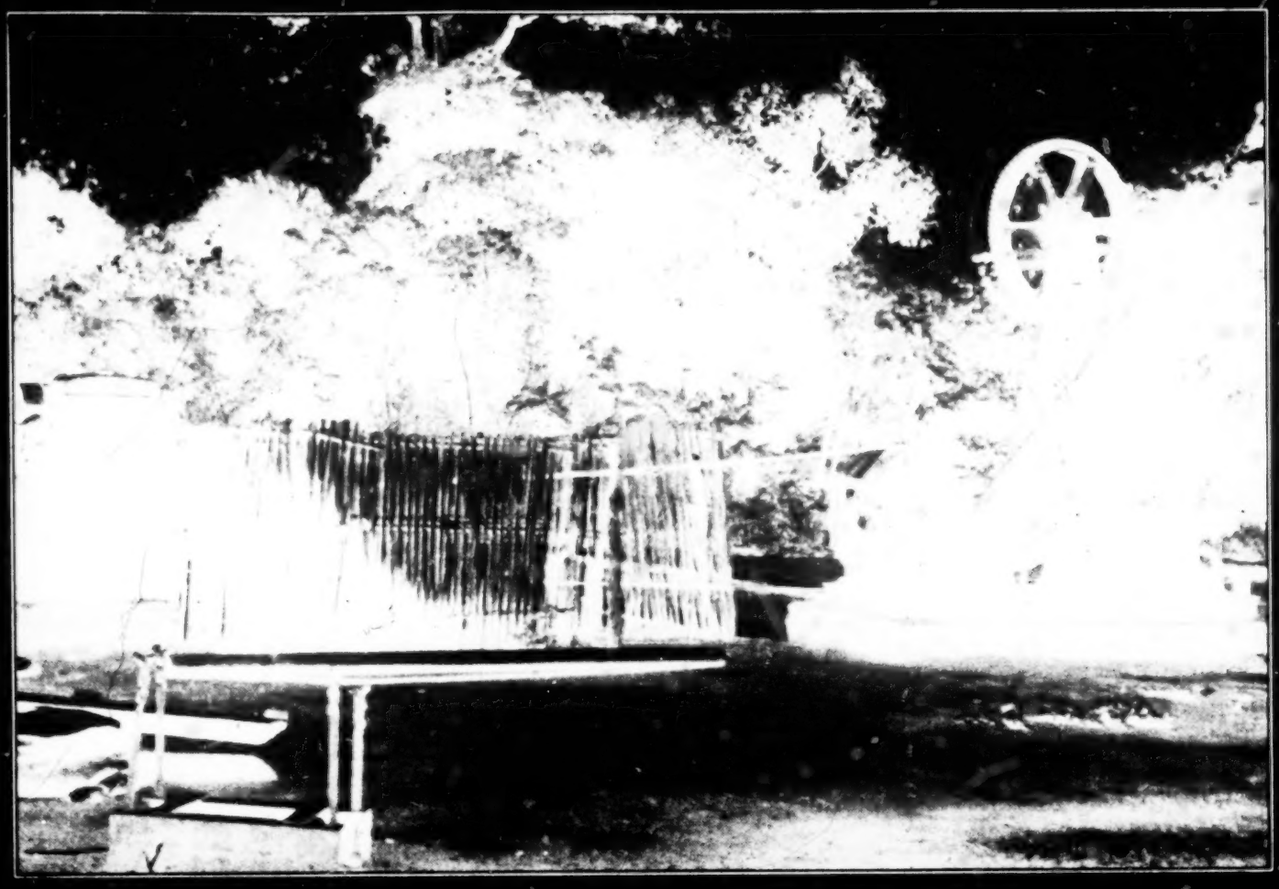
thirty-two miles to Nachingwea will be opened in January, 1954 and the extension of seventy miles from there to Lumesule some time in 1955. The branch line from the small port of Mkwaya at the head of Lindi creek to Ruo Junction is already working and provides Lindi with a link to the main line. On some parts of the first section construction has been difficult on account of erosion and black cotton soil but west of Nachingwea the going is easier and construction is likely to be comparatively easy as far as the Tunduru area, after which the country is hilly and construction would be more difficult.

101. Originally the line from Mtwara to Lumesule was planned as an outlet for exports from the O.F.C. area around Nachingwea, but since then economic and engineering surveys have been carried out to study the Southern Railway as part of a much larger project to join the Tanganyika and Central African railway systems together. This would take the line through Songea and the Ngaka coalfields into Njombe District and thence through the Southern Highlands Province, round the north of Lake Nyasa and down to the Rhodesian Railways at Kapiri Mposhi forty miles north of Broken Hill. Among the many factors governing a decision on this large and costly scheme is the future of the Ruhuhu coalfields. It is estimated that the extension of the line from Lumesule to Ngaka, at mile 499 from Mtwara, would take six years at a cost of approximately nine million pounds.

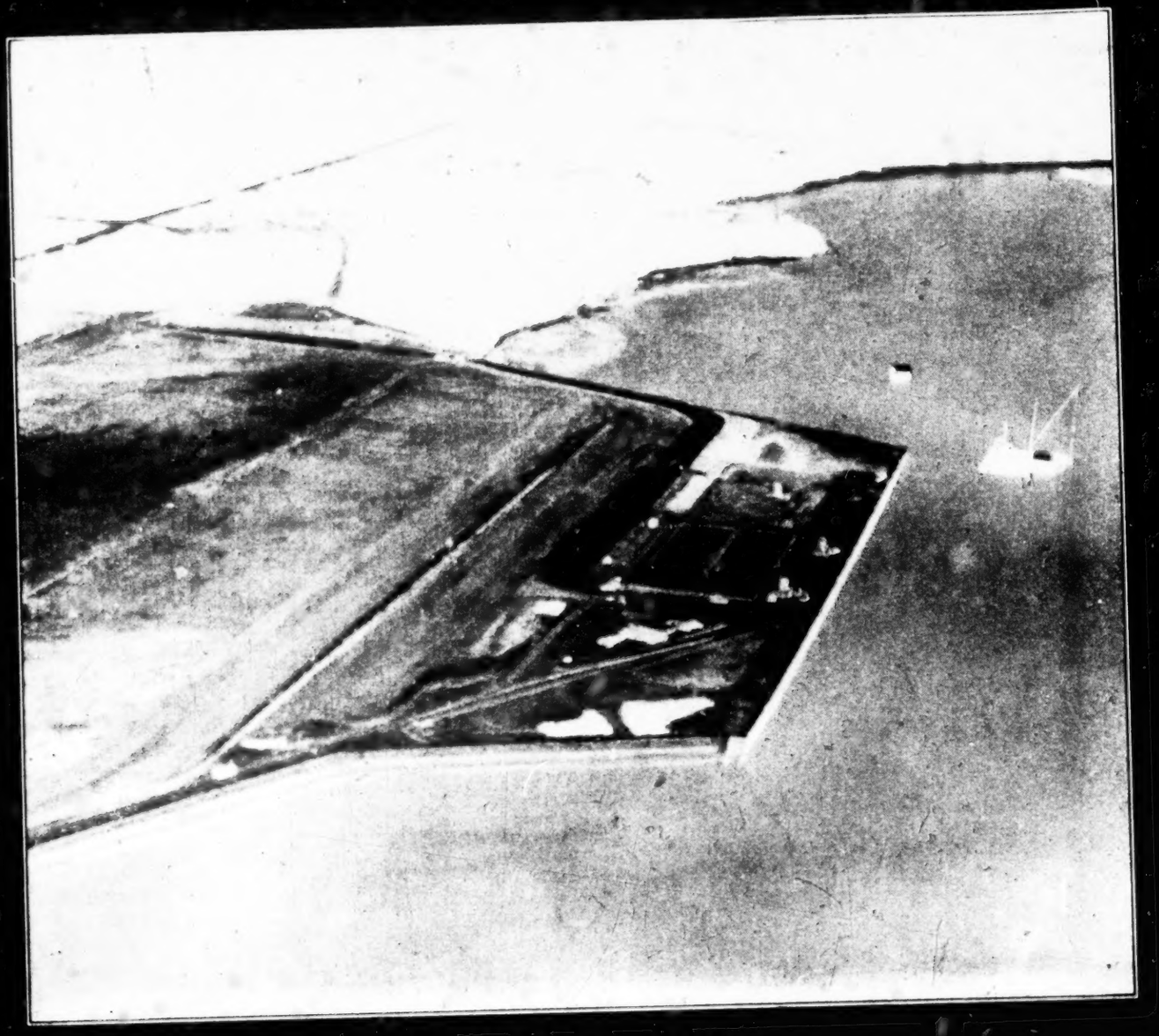
102. The importance of the railway in economic development hardly needs emphasis. By lowering freight costs on both imports and exports it will encourage business enterprise and in some parts will enable certain crops to be grown economically which have not been worthwhile in the past owing to the high cost of the road haul to the coast. It will be Government policy to encourage the carrying of freight on the railway as far as possible and consideration is being given to restrictions on licensing of goods-carrying vehicles to prevent competition by road hauliers on roads parallel with the railway. It is hoped that such restrictions would have the effect of diverting road haulage into its proper function of a feeder service on routes running into the railway. There will be no intention however of limiting the carriage of passengers on road services because they are not regarded as profitable traffic on the railway in view of the higher overheads they entail in rolling stock, staff, etc.

103. It is too early yet to forecast how the pattern of the trade routes in the Province will change when the railway and Mtwara start operating in January 1954. It will take time for traders and shippers to calculate the relative costs of the various routes and to re-orientate their own supply arrangements. Some of those arrangements, particularly among the sisal estates in Lindi District, are long established and economical and the prospects of them being abandoned in favour of the Mtwara route will depend largely upon whether special rates can be quoted at attractive enough figures for through traffic from the sisal jetties to Mtwara. Moreover the gradual expansion of Mtwara, with improved commercial services and transportation facilities, will no doubt bring a progressive shift of traffic towards the port.

104. Nevertheless, although it will be Government policy to route as much traffic as possible through Mtwara, it is not certain that the whole of the Lindi export and import traffic will find it economic to move over the Mtwara line. Distances by rail from Ruo Junction, which is exactly half-way between Mtwara and Nachingwea, are significant. From Ruo to Mtwara is sixty-six miles and



Water Supply at Mkumba, Nachingwea



Mtwara Port from the air

to Mkwaya only thirteen. Extra freight costs over this fifty-three mile difference will clearly be an inducement for traffic, even from west of Ruo, to use the route through Mkwaya and Lindi port unless other factors arise to tip the scales in favour of Mtwara. The most important of these will be the freight rates charged for shipments through Mtwara, which have not yet been published by the Shipping Companies.

105. The Mkwaya-Ruo Branch Line is only of temporary construction and a decision about its future has not yet been taken. If it were to be closed the production from Lindi District east of Mingoyo would have to be exported through Lindi, representing a loss to the railway and Mtwara of some 20,000 tons or more a year. It is intended however to keep the line open for at least a further two years until the main line is fully consolidated and for purposes of this review it is assumed that the line will remain in operation.

SHIPPING.

106. Lindi is an "outport". This means that in view of its limited facilities and modest tonnages the Shipping Companies levy an "outport surcharge" of thirty-five shillings per ton on imports and twenty-one shillings per ton on exports handled through it. Where a port can offer good facilities, a quick turn-round and substantial tonnages in good lifts the Shipping Companies may declare it a "berth port" at which standard rates are charged without the outport surcharge. Once such a declaration has been made it is not normal for it to be retracted and the Shipping Companies are therefore particular to ensure that the advantages offered by the port are permanent before committing themselves to the reduction in rates. Where that permanence is not yet assured more flexibility is offered by the unofficial device of treating it as a "favoured port" whereby normal berth port rates are charged provided that facilities and tonnages are kept up to a specified level, but cancelled if they drop below it. It is hoped however that Mtwara will be accorded berth port rates from the outset.

107. The application of berth port rates to Mtwara would ensure that all traffic from or to Ruo and westward passed through Mtwara and over the railway, and would also mean such a saving in cost as to exert a strong influence over traffic from the rest of Lindi District east of Ruo. Most of the latter goes out on through Bills of Lading by coastal ships from Lindi for transhipment at Zanzibar for the same cost as direct shipment in deep sea ships from Lindi or Mikindani. This cost nevertheless includes the Lindi outport surcharge. Berth port rates at Mtwara would be a big enough saving to nullify the advantage of shipment by that means on through Bills of Lading and also to absorb the additional rail freight to Mtwara. They would therefore be an effective way of attracting all traffic through Mtwara. If the shipping companies however agree only to apply reduced outport surcharge rates to Mtwara the amount of the reduction will govern the influence exerted on Lindi District traffic. The decision of the shipping companies on this issue is awaited.

MTWARA PORT.

108. The new port will be opened to traffic in January 1954, after five years under construction. Both berths will be available then but the second transit shed, viz. on the east berth, will not be completed until some weeks after the opening. Since 1948 an African village of a hundred houses has been erased and the inhabitants housed in the new village of Chuno. A sisal estate is being steadily taken over to make way for the new town which has now become the headquarters of the Mikindani District and the Provincial headquarters of the Province.

109. The 1,248 feet of the wharf will provide two berths for deep sea ships with thirty-two feet of water at low water springs. Cargo handling is to be by ships' derricks in the first instance. The quay wall is a gravity wall of sloping concrete blockwork (slicework) founded on a bed of stone rubble. There are five layers of these blocks with nine feet of fine ashlar blocks as a finishing on top. The first of the 1,780 blocks, each weighing approximately fifty tons, was laid on 12th August, 1949 and the last on 9th April, 1952.

CONCLUSION

110. In 1947 exports from the Southern Province were valued at £513,822 which was 4·6 per cent of the territorial total. By 1951 they had risen to £3,212,567, or 8·5 per cent of the territorial total. The increase was accounted for largely by a rise in African agricultural production stimulated by additional staff engaged for that purpose. The 1950 estimate was for five more Agricultural Assistants, an Assistant Beeswax Officer, forty-eight Government Agricultural Instructors, twenty-two Beeswax Instructors and an Office Superintendent for the Provincial Agricultural Office. All these have been provided, except the Office Superintendent. Apart from the normal expansion of Government departments it is probable that no more additional staff will be needed specifically for agricultural development plans. African production will continue to increase but capital enterprises are steadily assuming greater importance and making a large contribution to the value of Provincial exports. A growing number of non-native estates are coming into production, the O.F.C. produced a good crop in 1953 in spite of poor rainfall, timber production is rising and mineral development is attracting increasing attention.

111. Progress in the last three years with modest means has been good. With all these new prospects it can be better in the next few years if the economic potential of the Province is recognized and if adequate Government funds are available for expenditure on the capital services necessary for development. In 1951 it was stated:—

> "It is the intention of the Tanganyika Government, by all means at its disposal, to accelerate the development of the Southern Province with the aim of increasing the potential exports and imports of the region . . . . To implement this intention, the Government has signified its willingness to undertake substantial capital expenditure on basic services such as roads, water supplies, etc., and on the provision of additional administrative and agricultural staff . . . . ."*

By the end of 1953 approximately £64,000 of the original allocation of £100,000 has been spent. Further funds will need to be spent, particularly on communications, and some of the other means by which Government expenditure can stimulate development by private capital are indicated in this report. It is not certain however that Government can contemplate a large programme of expenditure in the next few years and the impetus behind the economic development of the Province will have to spring from increased production, particularly by the African population, and capital investment by private enterprise.

*Legislative Council. Sessional Paper No. 1 of 1951. Government Printer, Dar es Salaam.

APPENDIX A

TOTALS, MONTH BY MONTH, OF PRINCIPAL NATIVE PRODUCE SOLD ON THE MARKETS OF SOUTHERN PROVINCE DISTRICTS IN 1952 (IN TONS)

Month	Kilwa	Lindi	Masasi	Mikindani	Nachingwea	Newala	Songea	Tunduru	Totals
January	86	20	90	150	5	1,046	10	—	1,407
February	31	9	47	90	5	812	48	—	1,042
March	51	10	60	36	5	664	12	—	838
April	42	3	55	42	6	553	20	—	721
May	123	—	150	81	13	1,064	17	—	1,448
June	115	—	516	278	164	1,167	52	100	2,392
July	558	617	571	162	180	1,174	200	529	3,991
August	274	394	734	278	98	2,149	348	224	4,499
September	81	524	881	769	75	3,765	229	47	6,371
October	126	575	780	476	46	4,971	379	36	7,389
November	97	1,439	1,856	1,006	78	5,176	154	32	9,838
December	29	765	736	567	22	5,918	75	33	8,145
	1,613	4,356	6,476	3,935	697	28,459	1,544	1,001	—

APPENDIX B

MARKET PRODUCE PRICES

The prices quoted are fair average prices of principal commodities on the markets of Lindi District in 1952, per kilogramme.

Produce	Shs.	Cts.
Bambara nuts		40
Beeswax	4	30
Cashew nuts		72
Cassava		20
Castor seed		95
Colombo root		47
Groundnuts		85
Kapok		83
Maize		35
Onions		63
Paddy		50
Pulses		39
Sesame		85
Sorghum		35
Sunflower		38
Tobacco (fire-cured)	2	66

APPENDIX C

DISTRIBUTION OF TRADING CENTRES AND TRADING LICENCES, BY DISTRICTS

District	No. of trading centres	Trading Licences: European	Asian	African
Kilwa	4	...	98	478
Lindi	23	21	331	483
Masasi	7	2	91	270
Mikindani	10	11	174	307
Nachingwea	10	11	19	137
Newala	7	...	107	293
Songea	9	11	58	1,015
Tunduru	8	6	46	75
Total ...	78	62	924	3,059

APPENDIX D

SCHOOLS AND ATTENDANCES

1. *Number of Schools in Southern Province:*
   - (i) Primary 286
   - (ii) Boys' middle (registered but not all fully developed) ... 26
   - (iii) Girls' middle 3
   - (iv) Teacher training (male) 1
   - (v) Teacher training (female) 1
   - (vi) Junior secondary 1

2. *Proportion of Children of School Age actually in Primary Schools in 1952:*

	%
Kilwa District	15·5
Lindi District	12·3
Masasi District	76·1
Mikindani District	12·0
Nachingwea District	43·7
Newala District	31·4
Songea District	70·7
Tunduru District	16·0

3. *Number of Children at Primary Schools in the Province:*

Boys	24,547
Girls	12,037
	36,584

APPENDIX E

EMPLOYMENT

NUMBER OF EMPLOYING CONCERNS BY SIZE AND DISTRICTS—BASED ON THE 1952 LABOUR ENUMERATION

Number of Employees	Kilwa	Lindi	Masasi	Mikindani	Mtwara	Newala	Nachingwea	Songea	Tunduru	Total
1 — 5	80	543	45	186	78	15	223	70	56	1,296
6 — 10	7	33	12	11	5	4	29	15	4	103
11 — 25	13	19	7	10	3	4	9	6	6	77
26 — 50	1	9	5	4	3	1	8	11	4	46
51 — 100	1	9	2	2	1	2	8	2	2	27
101 — 200	2	5	2				13	3		31
201 — 300	1	2			1		1			4
301 — 400		3	1	1			1	1		6
401 — 500	1	3					1			5
500 and Over		8		3	1		1	1		14
	106	634	74	215	95	28	272	111	72	1,807

APPENDIX F

RAILWAY

The railway from Mtwara to Ruo where it joins the existing railway from Mkwaya to Nachingwea was opened on 17th January, 1954 for the carriage of passengers, luggage, parcels, livestock and goods traffic.

Standard railway rates and charges as published in E.A. Railways and Harbours Tariff Book No. I apply to the movement of traffic over the railway, subject, until further notice, to "construction line" conditions of carriage as published in Section 20 (2) of the E.A. Railways Administration Act of 1950

The charging distances between the various stations on the railway are in the mileage table in Appendix G.

The following experimental train services were introduced on 17th January, 1954:—

UP		DOWN	
Station	Sundays and Wednesdays	Station	Mondays and Thursdays
Mtwara	Dep. 07.00	Nachingwea	Dep. 07.00
Mikindani	Dep. 08.00	Chilungula	Dep. 08.10
Mpapura	Dep. 10.15	Nanganga	Dep. 09.30
Kitere	Dep. 11.30	Mahiwa	Dep. 10.30
		Mtama	Dep. 11.10
Mkwaya	Dep. 12.00	Ruo	Dep. 12.30
Ruo	Dep. 13.30	Mkwaya	Arr. 14.00
Mtama	Dep. 14.50		
Mahiwa	Dep. 15.30	Kitere	Dep. 14.30
Nanganga	Dep. 16.30	Mpapura	Dep. 15.45
Chilungula	Dep. 17.50	Mikindani	Dep. 18.00
Nachingwea	Arr. 19.00	Mtwara	Arr. 19.00

APPENDIX G

TABLE OF THE MORE IMPORTANT DISTANCES

1.—RAIL

Mtwara to:	Miles
Mikindani	10
Mpapura	29
Kitere	44
Ruo	66
Mkwaya	79
Mtama	82
Mahiwa	89
Nanganga	100
Chilungula	115
Nachingwea	132
Lumesule	202
Ruo to Mkwaya	13

2.—SEA

Lindi to:	Miles
Aden	1,965
Beira	860
Dar es Salaam	217
Kilwa Kisiwani	73
London	6,605
Mikindani	37
Mombasa	365
Mtwara	37
Southampton	6,435
Tanga	314
Zanzibar	253
Mikindani to London	6,606
Mtwara to London	6,604

3.—ROAD

	Miles
Masasi	94 from Lindi 150 from Mtwara 35 from rail at Nachingwea
Mikindani	70 from Lindi 8 from Mtwara
Nachingwea	91 from Lindi 161 from Mtwara
Newala	88 from Lindi 102 from Mtwara 45 from rail at Mtama
Songea	386 from Lindi 456 from Mtwara 240 from rail at Lumesule
Tunduru	218 from Lindi 293 from Mtwara 70 from rail at Lumesule

MILEAGE TABLE: SOUTHERN RAILWAY

	Mtwara	Mikindani	Mpapura	Kitere	Ruo	Mkwaya	Mtama	Mahiwa	Nanganga	Chilungula	Nachingwea
Mtwara		10	29	44	66	79	82	89	100	115	132
Mikindani	10		19	34	56	69	72	79	90	105	122
Mpapura	29	19		15	37	50	53	60	71	86	103
Kitere	44	34	15		22	35	38	45	56	71	88
Ruo	66	56	37	22		13	16	23	34	49	66
Mkwaya	79	69	50	35	13		29	36	47	62	79
Mtama	82	72	53	38	16	29		7	18	33	50
Mahiwa	89	79	60	45	23	36	7		11	26	43
Nanganga	100	90	71	56	34	47	18	11		15	32
Chilungula	115	105	86	71	49	62	33	26	15		17
Nachingwea	132	122	103	88	66	79	50	43	32	17	

APPENDIX H

POPULATION

From estimates based on the 1948 Census.

District	European	Asian	African	Total
Kilwa	23	340	93,084	93,447
Lindi	472	3,694	227,376	231,542
Masasi	94	102	127,022	127,218
Mikindani	157	848	110,139	111,144
Nachingwea	350	190	45,000	45,540
Newala	36	300	154,710	155,046
Songea	285	210	156,500	156,995
Tunduru	34	85	66,408	66,527
	1,651	5,769	980,239	987,659

1:1,500,000

SOUTHERN PROVINCE DEVELOPM

8°

SOUTHERN HIGHLANDS PROVINCE

EASTERN PROVINCE

NJOMBE

TO NJOMBE

LIGANGA (IRON ORE AREA)

MAHANJE

NGAKA (COAL FIELD AREA)

R. Ruhuhu

R. Ruhuhu

R. Ruhuhu

R. Ruhuhu

R. Ruhuhu

R. Luwegu

R. Luwegu

LIKUYU

MCHOMOLO

MACHUGWO

NDIRIMA

PERAMIHO

SONGEA

RUANDA

LITUHI

MATIRI

MATIMBO BARAZA MISSION

LAKE

R. Mbarangandu

R. Mbarangandu

R. Mbarangandu

NAMPUNGA

R. Nyoni

R. Nyoni

R. Nyoni

R. Liwale

NYERA

LIWALE

R. Mihumo

R. Angai

LITOO

KIPERCARE

MAKUNGUWIRA

NACHINGWEA

R. Mbwemkuru

R. Nampungu

KIPOJOROO

JUMBE SALIM'S

MATEMANGA

MSAMALA

R. Matungulu

R. Nampungu

R. Mbemkuru

LUMESULE

JUU

MATEKWE (O.F.C.)

AREA FOR ALIENATION

R. Lumesule

MINDU

MAGOMBERA

MAGOMBERA

MAGOMBERA

...IENT

TANGANYIKA

40°

8°

INDIAN OCEAN

M.N.

→TO DAR.ES.SALAAM

MARENDENGO

SAMANGA

MITEJA

KILWA KIVINJE

MBISIMBA

MBATE

MASOKO

KIRONJENGWALE

MITANDAWALA

K I L W A

R. Marudyi

KISWERE SISAL ESTATE

KISWERE

RUSHUNGI JETTY

KIRANJERANJE

R. Nakiu

NDANDAWALA

LUKULA MOSQUE

MCHINGA

L I N D I

TIMBER CONCESSION AREA (STEEL BRO...

NAHINO

LINDI

KITUNDA

MBEMBA

RUANGWA

RONDO PLATEAU

NARUNYU MTUA

NDUMBWE

MTWARA

MIKINDANI

MTAMA

RUN

CHINGWEA

M I K I N D A N I

MASANGANDA

MIKWITI

O.R.C. AREA

MEDA

LITEHO

MIRONJOHAMO

MAHUMBIKA

NEWA

CHIGUGU

CHIWATA

CHIDYA

KITANGARI

NANYAMBA

MICHENJELE

MANYINDWA

NANDETE

TANDAHIMBA

MASASI

AREA SUITABLE FOR CATTLE

NAMIKUPA

R. Chiumbu

R. Ruvuma

MAHUTA

NYASA

MBAMBA BAY

MATENGO HILL COUNTRY

LITEMBO

MAGAGURA

MARRA

MPITIMBI

SONGEA

MHUKURU

R. Lumeme

R. Lumbo

R. Mhukuru

R. Luhira

LIGERA

PROPOSED NEW MAIN ROAD

MGWINA TOBACCO AREA

R. Mtonji

LUSENA (NATIVE TOBACCO AREA)

R. Ruvuma

NAMPUNGU

PUCHAPUCHA

NAKAPANYA

R. Mhukuwesi

TUNDURU

LIGOMA

NAMASAKATA

SENGWA

R. Ruvuma

R. Sesewete

MBESA

R. Lukumbule

LUKUMBULE

CHAMBA

PORTUGUESE EAST

Z1520

LEGEND

RAILWAYS (COMPLETED)

RAILWAYS (PROPOSED)

MAIN ROADS

OTHER ROADS

TERRITORIAL BOUNDARIES

PROVINCIAL BOUNDARIES

DISTRICT BOUNDARIES

LIMIT OF PERMANENT INFESTATION (TSETSE)

LIMIT OF DISPERSION (TSETSE)

GAME RESERVES

LEGEND

RIVERS AND WATER COURSES

FARMS

PLATEAUS

DEVELOPMENT AREAS

COAL FIELDS AND IRON ORE AREAS

TOWNSHIPS

MINOR TOWN

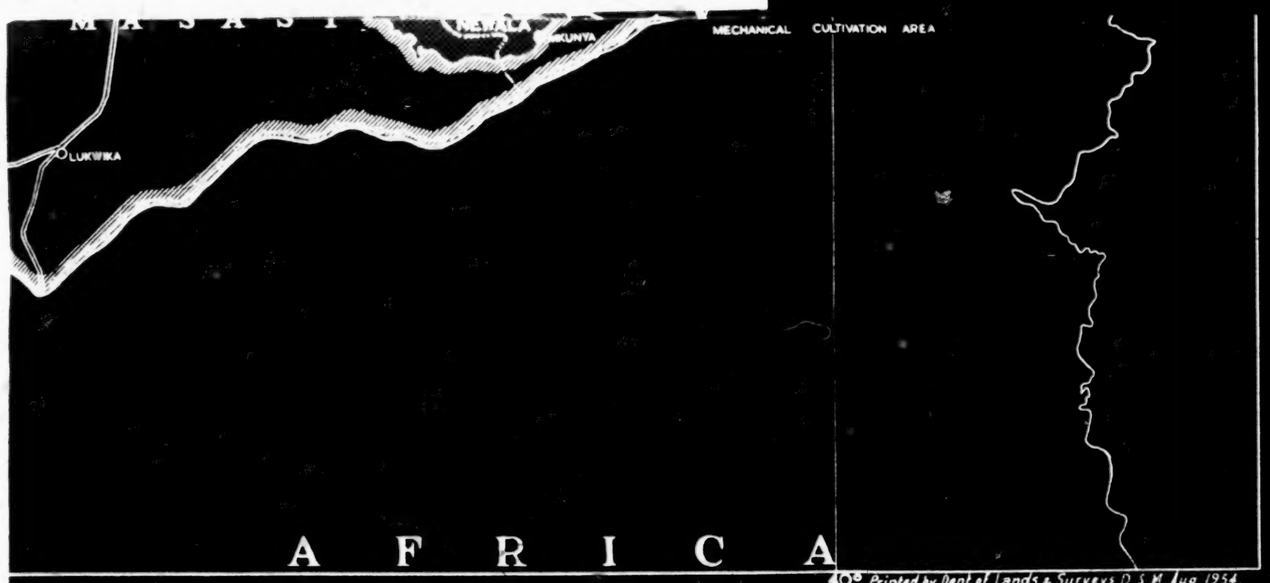
VILLAGES

MISSION STATIONS

SCALE 1/1,500,000

1 INCH TO 23.68 MILES

MILES 15 0 15 30 45 60 75 90 105 120



40⁶ Printed by Dept of Lands & Surveys D S M Aug 1954

135 150 MILES

THIS MAP IS COMPILED TO ILLUSTRATE, AND TO BE READ IN CONJUNCTION WITH, THE REPORT ENTITLED "A REVIEW OF DEVELOPMENT PLANS IN THE SOUTHERN PROVINCE OF TANGANYIKA 1953"

OVERSEAS FOOD CORPORATION

SOUTHERN PROVINCE

TANGANYIKA

DRAWING NO SP/206

SURVEY DEPARTMENT NOVEMBER 1953